### SOUTHEASTERN BIOLOGY



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### B **ONLY CALL FOR PAPERS** FOR THE 71ST MEETING

ASB

ASB

ABSTRACT SUBMISSION—SEE PAGE 477

ASB



Thomas R. Wentworth, ASB Past President, presents his address on page 444.

ASB

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### SOUTHEASTERN BIOLOGY

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### **PURPOSE**

The purpose of this association shall be to promote the advancement of biology as a science by encouraging research, the imparting of knowledge, the application of knowledge to the solution of biological problems, and the preservation of biological resources. The ASB has representation in Section G Committee of the AAAS. Varying types of membership are available to individuals and institutions. See inside back cover.

### TIME AND PLACE OF FUTURE MEETINGS

- April 7-10: Co-hosted by Western Carolina University, Cullowhee, North Carolina, and its Southern Appalachian Biodiversity and Ecology Center, and the University of North Carolina, Asheville, North Carolina. Meeting site is the Crowne Plaza Hotel, Asheville, North Carolina.
- 2011 April 13-16: Hosted by the University of Alabama, Huntsville, Alabama. Meeting site is the Von Braun Convention Center adjacent to the Embassy Suites Hotel, Huntsville, Alabama.
- 2012 Athens, GA. 2013 West Virginia.

### THE VIEW FROM HERE

### A MESSAGE FROM THE PRESIDENT PATRICIA B. COX

As I sit here in my office on the 11<sup>th</sup> floor of the TVA towers looking out the window at the Smoky Mountains in the distance, I have so many thoughts running through my head about what to say to YOU, the members of ASB. First, I want to say that I am very proud to be the first two-year president of ASB and I will do my very best to continue the high level of professionalism and dedication to our society that has been exhibited by my 71 predecessors. Secondly, I would also like to thank those of you who completed the ASB membership survey that was sent out earlier this summer. Approximately 40% (360) of members responded to the survey and official results will be forthcoming. However, I did want to mention a couple of things that stood out to the committee.

- Age: 40.2 % were 51-70; 27.2% were 36-50; and 23.3% were 20-35
- 60.6% were male; 39.4% were female
- Only 18.3% were student members
- 41.6% were graduate students when they joined ASB
- 96.8% thought ASB membership is a good value
- Besides resources on the ASB website, the next most observed valued benefit to ASB membership was Lifelong Friendships
- 85% of you belong to other professional societies

For me, the most interesting was the rankings of "Why you attend the ASB Annual Meeting," listed as follows from most important to least important:

- Vacation
- · Friday night awards banquet
- Field trips
- Thursday night social
- Workshops
- Exhibits
- Visiting old friends
- Networking
- Attend paper and poster sessions
- Present a paper or poster

Now, let's ponder on those responses for a minute. I can't wait to be part of the group that thinks the meeting is a vacation and they don't have to worry about giving a talk at the annual meeting. I realize these rankings makes more sense when you put it in the context that over 40% of the respondents were between 51 and 70.

I would like to switch gears here and talk a little about Past and Present ASB. Between 1937, when George Boyd of the University of Georgia was our first president, until now, ASB has grown from a small society of less than 60 members from five southern states to the largest regional society with approximately 1000 members from 37 states and 13 foreign countries. The first

organized meeting was held in Athens, Georgia in 1938 and was attended by 76 biologists; our last meeting was held in Birmingham, Alabama and was attended by over 700 participants. The largest meeting to date was held in 2006 (Gatlinburg) with nearly 1000 attendees and we are hoping ASB 2010 in Asheville, North Carolina will also attract as many participates. Due to higher numbers of attendees, this has allowed ASB to target different meeting venues and to modify how the meetings are being planned. Gone are the days of meetings being held on college campuses where members stayed in dorm rooms, which also means gone are the days of modest registration and accommodation rates. With that said, ASB is still one of the most affordable professional meetings in the country. For example, Tim Atkinson (ASB Treasurer), Marilyn Pendley (Patron Member), and I represented ASB at the Botanical Society of America meeting in Snowbird, Utah. This national meeting is comparable to ASB in numbers of meeting attendees, and many ASB members were also present. But this is where the comparisons stop. ASB registration, banquets, luncheons, socials, and exhibitor rates are less. In addition, ASB has more and a greater diversity of exhibitors/vendors as well as attendees, which makes ASB more appealing to the average biologists. In my opinion, one of our biggest assets is our graduate student and Tri-Beta membership. ASB is often the first place graduate students stand in front of their "peers" and give an oral presentation about their research. Many of us started this way and after getting positive or negative comments, were able to present the paper at a more rigid national venue. I also believe ASB is the perfect place for networking which allows for professors to find top-notch graduate students, for graduate students to learn about other degree programs and potential major professors, and for making life-long friendships with graduate students from other institutions.

One of the reasons for our recent survey was to determine what types of additional benefits can be provided to our members. But one benefit you can receive from ASB is one only YOU can provide for yourself . . . become an ACTIVE member of the society and I can promise you, benefits to you and your career will be tremendous. When I joined ASB back in 1986 and attended my first meeting in 1987 (the 50<sup>th</sup> anniversary of the Association), my future was uncertain. But before I knew it, I was at the University of Tennessee and taking students to ASB meetings. I was placed on the local arrangement committee for ASB 1995, then elected as a member-at-large a couple of years after that, and since then, I have been very active in promoting ASB. But before you can receive these great benefits, the first step is yours . . . you have to step up and volunteer or say YES when asked to serve.

I wish you all a great year and I look forward to seeing you in Asheville, North Carolina, April 7-10, 2010.

Sincerely, Patricia B. Cox



Incoming President Patricia B. Cox (left) receives the gavel from Past President Thomas R. Wentworth.

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Asheville, North Carolina, site of the next annual meeting April 7-10, 2010.

### ASSOCIATION OF SOUTHEASTERN BIOLOGISTS AIBS Annual/ Council Meetings

### AIBS Council Representative Report

May R. Berenbaum, 2009 AIBS President and Program Chair, opened the Annual Meeting by recognizing the Bicentennial celebration of Darwin's birth and that of Abraham Lincoln. A broad spectrum of issues and concepts addressing the meeting theme, "Sustainable Agriculture: Greening the Global Food Supply", engaged participants. Breakout sessions provided additional opportunities for dialogue that reflected the diverse background of the assembled scientists. The Keck Center of the National Academies was the site of a special lecture by Robert Pennock, 2009 AIBS Outstanding Service Award Recipient. The lecture was followed by reception and an after-hours tour of the Koshland Science Museum. Bruce Alberts [Education Award], Rita Colwell [Past-President's Award] and Danielle N. Lee [Diversity Scholar Award] were among the honorees recognized at the Awards Luncheon. Seventeen student posters were presented, including one international offering. The lectures are available in the media library at http://www.capwiz.com/aibs/home/.

The AIBS Council Meeting was held the day following conclusion of the annual meeting. For the first time, parts of the council meeting were made available online as a live webinar event. The reports included updates on the Encyclopedia of Life Project, NSF Biology Directorate Funding Opportunities and the Graduate Research Fellowship Program, BioOne, Public Policy, Education, Publishing, and Year of Science 2009. In essence, AIBS activities are active, focused, and productive.

The AIBS Legislative Action Center invites scientists to become strong advocates for public policy by participating in Center activities. Interested scientists should visit <a href="http://www.capwiz.com/aibs/home/">http://www.capwiz.com/aibs/home/</a>.

AIBS and NESCent are cosponsoring the 6<sup>th</sup> annual evolution symposium on 13 November at the NABT meeting in Denver, CO. The symposium entitled, "Evolution in Extreme Environments" includes an afternoon workshop featuring resources that will facilitate the incorporation of evolution in extreme environments concepts into classroom exercises.

NIMBioS [National Institute for Mathematical and Biological Synthesis] is a major initiative fostering interdisciplinary research at the interface between the biological and mathematical sciences. Details are posted at www.nimbios.org.

ASB members who are interested in enhancing their understanding and practice of evidenced-based teaching and learning are encouraged to apply for the residency opportunities in 2010. Visit www.biologyscholars.org for details.

Respectfully submitted, Geraldine W. Twitty AIBS Council Representative

## ASB Member Honored by WSU



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### Lafayette Frederick '52

In recognition of the distinction you have achieved as a mycologist and your lifetime commitnersearch, teaching and mentoring, the Washington State University Alumni Association bestoversearch, teaching and mentoring, the Washington State University Alumni Association bestoverson you its highest honor. The example you set and the excellence you have achieved in teace and research in mycology have inspired generations of students and resulted in the production graduate degrees. You and your students have made significant contributions to our understar of fungal biology and fungal systematics, especially of Neurospora and other pyrenomycetous of fungal biology and fungal systematics, especially of Neurospora and other pyrenomycetous successfully integrating the Association of Southeastern Biologists when so opened doors of opportunity for African American scientists, and your generous support of has opened doors of opportunity for African American scientists, and your generous support of achievements have brought acciain to Washington State University and WSU's Department of Pathology. For that and much more, we are eternally grateful.

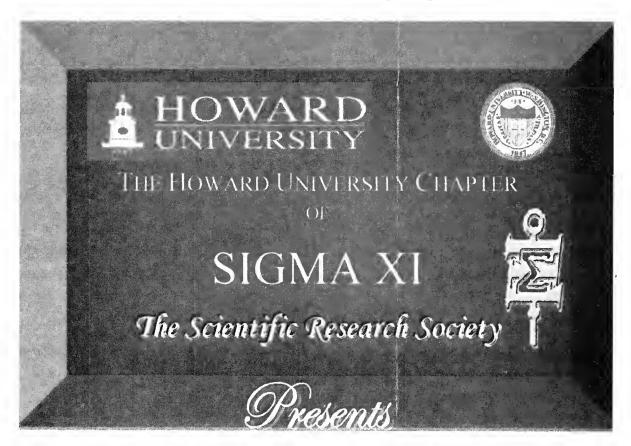
THIS SECOND DAY OF MARCH TWO THOUSAND AND NINE

June M. Water

VASH ALI INNI ASSOCIATION

2009 Meeting

### ASB Member Honored by Sigma Xi



### THE ANNUAL ERNEST EVERETT JUST MEMORIAL LECTURE

"Fungi and Antibiotics: Bad Bugs and Bad Drugs"
Dedicated to:
LAFAYETTE FREDERICK, PhD

### GUEST SPEAKER: RICHARD A. CALDERONE, PHD

Professor and Chairman
Department of Microbiology & Immunology
Biomedical Science Policy & Advocacy Program Director
School of Medicine

GEORGETOWN UNIVERSITY

GEORGETOWN UNIVERSITY Washington, DC 20007

Co-sponsored by: The Department of Biol Howard University Wednesday April 22, 2009 12:00 Noon

Marie Clark Taylor Auditorium
Ernest Everett Just Hall
Howard University
Washington, DC 20059

### EVENTS OF THE 2009 ANNUAL MEETING IN BIRMINGHAM, ALABAMA

### HOSTED BY THE UNIVERSITY OF ALABAMA, BIRMINGHAM, AND JACKSONVILLE STATE UNIVERSITY, JACKSONVILLE, ALABAMA

### ASB MERITORIOUS TEACHING AWARD UNIVERSITY PROFESSOR HONORED

### PRESENTED TO DR. MICHAEL J. BARANSKI CATAWBA COLLEGE, SALISBURY, NC

The 2009 Association of Southeastern Biologists Meritorious Teaching Award was presented to Dr. Michael J. Baranski of Catawba College at the 70<sup>th</sup> annual meeting of the Association in Birmingham, Alabama by the award committee chair, Dr. Ron Dimock. This very prestigious award is sponsored by Patron Member Carolina Biological Supply Company, Burlington, North Carolina, and includes a plaque, a check for \$1500 and copies of letters supporting the awardee's nomination. Dr. Baranski joins a very distinguished subset of MTA recipients who either had previously served as President of ASB (in his case from 1994-1995) or subsequently went on to that office. He has had numerous additional leadership roles in the Association.

Dr. Baranski received the BS in Biology from West Liberty State College, West Virginia, and the PhD in Botany from North Carolina State University, with a major in Plant Taxonomy and Ecology and related work in Genetics, Forestry and Wildlife Biology. He has spent his academic career at Catawba College, rising from the rank of Assistant Professor of Biology in 1974 to Professor of Biology in 1986, and continuing. His distinguished career includes having been the Director of the Collegiate Academy of the North Carolina Academy of Sciences from 1981 to 1985, and subsequently being President of the North Carolina Academy of Science from 2004 to 2005. Also a Past President of the Southern Appalachian Botanical Society, Dr. Baranski has served in a variety of positions in the Botanical Society of America, the Ecological Society of America and The Wildlife Society - North Carolina Chapter. He has had a variety of grants, served on an assortment of local, state and national panels and committees, and has had extensive editorial experience. He has taught roughly 20 different courses at Catawba College and an assortment of summer courses at field stations. He has mentored 44 undergraduate students in research.

Among his additional awards and recognition are his having received the Martha Sue Sebastian Memorial Award for excellence in teaching in the Botany Department at NC State University, having been awarded the Teacher of the Year Award for 2005 at Catawba College, and being named the Bashore Distinguished Professor of Environmental Science at Catawba in 2006. He has had Lake Baranski officially named in his honor in the Catawba College Ecological Preserve in recognition of his contribution to the development of the Preserve and of the Environmental Sciences Program at Catawba College. In

2006 the Michael J. Baranski Endowed Scholarship at Catawba College was established in his honor.

In the letter of nomination on his behalf, a former student speaks eloquently of the role of certain professors in shaping the lives of particular students. The writer notes that Mike's courses were simply referred to as "Baranski Courses" at Catawba that signified that the courses would be thorough, exceedingly demanding, eminently fair, and quite likely to lead a student to his or her life's calling, in this case as a Natural Heritage Botanist. Whenever appropriate, Mike's courses included field components ranging from the Outer Banks and Coastal Plain to the Great Smoky Mountains, and everywhere in between.

The letters endorsing Dr. Baranski for this singular honor included the following comments:

"I never had a professor who expected so much from his students and whose courses were approached not with fear, but rather respect, knowing that whatever the course topic, you will leave with a significant and valuable amount of knowledge."

"Dr. Baranski's teaching style took some getting used to. He treated his students as having capable minds, we were not coddled, and he expected the best from us. I remember sitting in his Plant Taxonomy course feeling overwhelmed after just the very first lecture. The amount of information that man provided in every lecture still impresses me to this day."

"I remember the first time I heard the name Michael Baranski was while I was in high school just before entering Catawba College. I happened to mention to an orchid nursery manager in Florida where I was going to school and he immediately got very excited and told me about an amazing professor there who had taught him botany and a love of plants. He told me to find Mike and learn everything I possibly could from him. As it turned out, that was the best piece of advice I have ever received."

"Dr. Baranski demanded that his students work hard, but in return he was not 'just a professor' but rather someone who taught with a passion and gave everything he had in lecture, lab and field."

"His courses are always challenging, rigorous and rich in information. It is with experiential learning that Dr. Baranski really makes connections with students."

"The best class I ever had. I want to take more of his courses."

"Scores of Dr. Baranski's students have gone on to careers in business, medicine, environmental consulting, conservation, research, teaching, and government service."

"Not only does field work foster a greater appreciation for how the natural world works and the desire to learn more about it, but ...field trips build a strong sense of community among students --- that's where I met my wife!"

"Dr. Baranski's courses demanded an air of fear, hard work, and sleepless nights. He was the supposed 'wicked witch' of our campus world. But despite that reputation I took several of his courses and found that every rumor was true – he was hard, expected 110%, didn't bend or yield, there was sweat and sleepless nights and times when I thought my head would explode. But in turn he gave 110%, believed in the students, and would start over until the material found its way into our thick skulls."

It is clear that Dr. Mike Baranski has made a lasting impression on generations of Catawba College students, and is a beloved professor. He is an outstanding recipient of the 2009 Meritorious Teaching Award.



Michael J. Baranski (right) receives the 2009 Meritorious Teaching Award from committee chair Ronald V. Dimock.



Dr. Michael J. Baranski expresses his appreciation on receiving the award.

### 2009 RESEARCH AWARD RECIPIENTS

### **ASB SENIOR RESEARCH AWARD**

The ASB Senior Research Award sponsored by ASB Patron Member Marilyn S. Pendley, Hudson, North Carolina, was presented by award committee member George R. Cline to **Jennifer R. Ellis**, formerly with the Department of Biological Sciences, Vanderbilt University, Nashville, Tennessee, but now with the Department of Plant Biology, University of Georgia, Athens, Georgia, for her manuscript entitled "Clonal diversity, spatial dynamics, and small genetic population size in the rare sunflower, *Helianthus verticillatus*." The manuscript is in review at the journal *Conservation Genetics*. Her paper presentation at the annual meeting is entitled "Extent of clonality in populations of the rare sunflower: EST-SSRs reveal small population size," *SE Biology* Abstract T42, 56(3).

Dr. Ellis submitted the following autobiography to the Print Editor.

I attended Carson-Newman College in East Tennessee where I received a B.A. in biology with a minor in mathematics. Here, I conducted several small-scale research projects that got me interested in research including a water quality study and a bird biodiversity project at a local wetland.

I completed my dissertation research work at Vanderbilt University studying the conservation genetics and population biology of an extremely rare sunflower species. I employed population genetic techniques to understanding factors that influence rarity. I also investigated issues relating to quantitative fitness variation among populations and examined clonal structure and spatial dynamics within populations.

The results of the paper presented at ASB prompted the United States Fish and Wildlife Service to upgrade the priority status of the whorled sunflower, *H. verticillatus*, from low to high.

Currently, I am conducting postdoctoral research at the University of Georgia where I am studying the genetic architecture of complex traits in the domesticated sunflower. For this research, we are conducting an association mapping study to evaluate traits such as flowering time and seed oil content. A study dissecting complex traits is possible since many more tools are available in domesticated sunflower than for example in wild related sunflowers. My goal is to learn these techniques in a system with available resources and then bring these methods back to natural systems.

### ASB STUDENT RESEARCH AWARD

The ASB Student Research Award sponsored by ASB Patron Member Martin Microscope Company, Easley, South Carolina, was presented by award committee chair Thomas Pauley to **Christopher G. Brown**, Department of Biological Sciences, Vanderbilt University, Nashville, Tennessee, for his paper entitled "Unorthodox tastes: Active appropriation of an anti-herbivore defense by trichome-seeking Neochlamisus leaf beetles," *SE Biology* Abstract T108, 56(3).



Jennifer R. Ellis (left) receives the ASB Senior Research Award from award committee member George R. Cline.



Christopher G. Brown (left) receives the ASB Student Research Award from award committee chair Thomas K. Pauley.

### BROOKS/COLE CENGAGE LEARNING STUDENT RESEARCH AWARD IN AQUATIC BIOLOGY

The Brooks/Cole Cengage Learning Student Research Award in Aquatic Biology sponsored by ASB Patron Member Cengage Learning—Brooks/Cole Publishing Company, Belmont, California, was presented by award committee chair Thomas K. Pauley to **Shannon E. Pittman**, Department of Biology, Davidson College, Davidson, North Carolina, for her paper co-authored with Timothy L. King of the USGS, and Michael E. Dorcas of Davidson entitled "Genetic and demographic status of a bog turtle population: Implications for conservation and management," *SE Biology* Abstract T72, 56(3).



Shannon E. Pittman (second from right) receives the Brooks/Cole Cengage Learning Student Research Award in Aquatic Biology from award committee chair Thomas K. Pauley (second from left) and company representatives Peggy Williams (far left) and Tom Ash (far right) of the Cengage Learning—Brooks/Cole Publishing Company.

### ASB RESEARCH AWARD IN MICROBIOLOGY

The ASB Research Award in Microbiology sponsored by ASB was presented by award committee chair Christi Magrath to **Hannah E. Menefee**, Department of Biology, The University of Mississippi, University, Mississippi, for her paper coauthored with Colin R. Jackson of the same university entitled "Prevalence of antibiotic resistant bacteria in the Mississippi River near Memphis," *SE Biology* Abstract T140, 56(3).

### **ASB STUDENT POSTER AWARD**

The ASB Student Poster Award sponsored by ASB Patron Member Cengage Learning—Brooks/Cole Publishing Company, Belmont, California, was presented by award committee chair Brian Odom to **Kimberly P. Farris**, Department of Biology, Birmingham-Southern College, Birmingham, Alabama, for her poster coauthored with Megan E. Gibbons of the same college entitled "The trade-off of egg size versus number in the red-eyed tree frog, *Agalychnis callidryas*," *SE Biology* Abstract P53, 56(3).



Kimberly P. Farris (left) receives the ASB Student Poster Award from award committee chair Brian Odom.

### THE NORTH CAROLINA BOTANICAL GARDEN AWARD

The North Carolina Botanical Garden Award sponsored by the NCBG, Chapel Hill, North Carolina, was presented by award committee chair Johnny Randall to **Lissa M. Leege**, Georgia Southern University, Statesboro, Georgia, for her paper entitled "Response of an endangered coastal plain legume (*Baptista arachnifera*) to prescribed fire," SE *Biology* Abstract T198, 56(3).

### **EUGENE P. ODUM AWARD**

The Eugene P. Odum Award sponsored by the Southeastern Chapter of the Ecological Society of America was presented by award committee chair Joel Gramling to **Marc A. Milne**, Old Dominion University, Norfolk, Virginia, for his paper co-authored with Deborah A. Waller also of Old Dominion entitled "The effectiveness of the attraction mechanisms of the purple pitcher plant, *Sarracenia purpurea*, at attracting prey and residents," SE *Biology* Abstract T85, 56(3).

The Odum award committee recognized two honorable mentions. **Charlotte K. Steelman**, Davidson College, Davidson, North Carolina, received Honorable Mention for her paper co-authored with Michael E. Dorcas entitled "The effects of airplane noise on anuran calling," *SE Biology* Abstract T115, 56(3). **Nathan V. Whelan**, University of Alabama, Birmingham, Alabama, received Honorable Mention for his paper co-authored with Jon C. Gering, Dean R. Decock, Tracey Blasingmae, and Bryan Hartwig all four latter of Truman State University, Kirksville, Missouri, entitled "Advances in the statistical methodologies of phylogenetic community ecology," *SE Biology* Abstract T126, 56(3).



Marc A. Milne (left) receives the Eugene P. Odum Award from award committee chair Joel Gramling.

### ELSIE QUARTERMAN-CATHERINE KEEVER AWARD

The Elsie Quarterman-Catherine Keever Award sponsored by the Southeastern Chapter of the Ecological Society of America was presented by award committee chair James Luken to **Devynn A. Birx-Raybuck**, Davidson College, Davidson, North Carolina, for her poster co-authored with Steven J. Price and Michael E. Dorcas both also of Davidson College entitled "Landscape-scale factors influence use of urban retention ponds by breeding anurans," *SE Biology* Abstract P65, 56(3).



Devynn A. Birx-Raybuck (left) receives the Elsie Quarterman-Catherine Keever Award from award committee chair James Luken.

### BOTANICAL SOCIETY OF AMERICA SOUTHEASTERN SECTION STUDENT AWARD

The Botanical Society of America Southeastern Section Student Award sponsored by the SE Section of the BSA presented two awards this year—one for best paper and one for best poster. Both awards this year were presented by award committee member Rebecca Bray. **John J. Wiley, Jr.**, Ohio University, Athens, Ohio, received the award for his paper co-authored with Brian C. McCarthy also of Ohio University entitled "Bryophyte community response to prescribed fire and thinning in mixed-oak forests of the unglaciated Allegheny Plateau," *SE Biology* Abstract T199, 56(3). **Max S. Lanning**, Western Carolina University, Cullowhee, North Carolina, received the award for his poster entitled "Clarifying the status of *Micranthes careyana* and *M. caroliniana* based on morphological and molecular differences," *SE Biology* Abstract P155, 56(3).



Max S. Lanning (left) receives the Botanical Society of America Southeastern Section Student Award for best poster and John J. Wiley, Jr. (right) for best paper from award committee member Rebecca Bray.

### **ASB GRADUATE STUDENT TRAVEL AWARDS**

The following graduate students received travel awards from ASB to attend the annual meeting in Birmingham. Selections were made by the ASB Graduate Student Support Award Committee, Michael Wayne Morris, Chair.

Nathan A. Bowman – Old Dominion University Chris W. Bruton – Mississippi State University Joseph R. Burger – University of Louisiana, Monroe **Suman Chitraker** – Troy University In K. Cho – Troy University lan M. Cohen – University of Tennessee, Chattanooga Lacy N. Danikas – Middle Tennessee State University **Todd A. Egerton** – Old Dominion University Elizabeth B. Evans – Mississippi State University Emily L. Gillespie – Wake Forest University Benjamin T. Hinkle – Troy University Max S. Lanning – Western Carolina University Justin L. Martin – University of Louisiana, Monroe **Diane E. Massey** – Middle Tennessee State University Marc A. Milne – Old Dominion University Angela M. Mojica - Old Dominion University Callie Montgomery – University of Tennessee, Chattanooga Matthew T. Muller - Old Dominion University Matt Pardue - University of Louisiana, Monroe Chris L. Rice - University of Louisiana, Monroe

Rachel E. Schroeder – Old Dominion University
Matthew R. Semcheski – Old Dominion University
Puja Shrestha – Troy University
Carolyn van Zwoll – Georgia Southern University
Megan P. White – Wake Forest University
John J. Wiley, Jr. – Ohio University

### SOUTHERN APPALACHIAN BOTANICAL SOCIETY AWARDS

President of SABS, Conley K. McMullen, presided over award presentations in three categories at the SABS/BSA Friday morning breakfast/business meeting. President McMullen also announced the names of the awardees at the Friday night awards banquet.

### Earl Core Student Research Award

Dr. Earl Core was a major force in the founding of the Southern Appalachian Botanical Club in 1936. The annual Core Student Award was established by the Society to provide financial assistance in support of student research projects in plant taxonomy, systematics, and ecology. The application deadline is February 1<sup>st</sup> of each year. Three monetary awards were presented this year to assist the following students with their research projects. Each student received a check for \$300.00.

- 1. **Tianita D. Duke**, Department of Biology, Austin Peay State University, Clarksville, Tennessee, "Taxonomy, ecology, and distribution of unusual populations of *Lysimachia hybrida* (Myrsinaceae) from Tennessee and Alabama." Advisor: Dr. Dwayne Estes.
- 2. **Sarah E. Galliher**, Department of Biology, Elon University, Elon, North Carolina, "Determining the effects of beech mortality due to beech bark disease on spring ephemerals in Great Smoky Mountains National Park." Advisor: Dr. David Vandermast.
- 3. **Benjamin Hook**, Department of Biological Sciences, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, "Influence of age, diameter, and location on compression wood formation in *Pinus strobus* L. following ice storm damage." Advisor: Dr. Carolyn Copenheaver.

### Richard and Minnie Windler Award

The Richard and Minnie Windler Award was established in 1990 at the annual meeting of SABS by Dr. Donald R. Windler of Towson University as a memorial to his parents. The award is presented annually to the author or authors of the best systematic botany paper published in *Castanea* during the previous year. The eligible papers may fall into the broad area of plant systematics, including floristic, experimental, revisionary, and nomenclatural studies.

A check for \$500.00 was presented for the best systematics paper published within *Castanea* during 2008. This year, the award went to **Dr. Michael Woods**, Department of Biological and Environmental Sciences, Troy University, Troy, Alabama, for his paper entitled "The genera *Desmodium* and *Hylodesmium* (Fabaceae) in Alabama," published in *Castanea* 73(1): 46-69 (2008).

### Elizabeth Ann Bartholomew Award

The Society annually presents this Award in memory of Elizabeth Ann Bartholomew's untiring service to the public, to plant systematics, and to this organization. This award is presented to individuals who have also distinguished themselves in professional and public service that advances our knowledge and appreciation of the world of plants and their scientific, cultural, and aesthetic values, and/or exceptional service to the society. The 2009 award was presented to **Charlie Williams**, 6720 Wheeler Drive, Charlotte, North Carolina. He received the award for his dedication to our better understanding of the history of botany in the Carolinas. A detailed presentation of the recipient's accomplishments can be found in the September, 2009, issue of *Castanea*.



Michael Woods (right) recipient of the SABS Richard and Minnie Windler Award is congratulated by SABS President Conley K. McMullen at the Friday night awards banquet.





Charlie Williams receives the SABS Elizabeth Ann Bartholomew Award at SABS/BSA Friday Morning Breakfast/Business meeting.

### BETA BETA BIOLOGICAL SOCIETY SOUTHEASTERN REGION OUTSTANDING PAPER AND POSTER AWARDS FOR 2009

At the 52<sup>nd</sup> Tri-Beta Annual Meeting held with the 70<sup>th</sup> ASB meeting, Donald H. Roush, Southeastern Region representative presented the following awards.

### Southeastern District I Paper Session Frank J. Brooks Paper Award Winner

**Nur-Taz Rahman**, Sigma Lambda. Wesleyan College. "Dose-dependent Antiproliferative Effects of ATRA and TNF-a in Human Uterine Smooth Muscle Cells."

### Southeastern District II Paper Session Frank J. Brooks Paper Award Winner

**Sara Jackson**, Mu Epsilon, Troy University. "Heat Shock Protein Interactions with the Androgen Receptor."

### Southeastern District I Poster Session John C. Johnson Poster Award Winner

**Shaina J. Machlus**, Sigma Phi, Guilford College. "An Investigation of Visually-guided Swimming Behaviors in Normal and Visually-impaired Zebrafish."

### Southeastern District II Poster Session John C. Johnson Poster Award Winner

Patel, Dixita, Beta Chi, University of Southern Mississippi. "A Simple Approach to Synthesize Unnatural Gamma Amino Acids."

### **ASB PLENARY SESSION**

Wednesday, April 1, 2009

Featured Speaker: Dr. Andrew Berry Harvard University, Cambridge, MA

Darwin's Third Century: A Return to Natural History

The audience was welcomed by Dr. Carol Z. Garrison, President of the University of Alabama at Birmingham, and Dr. William A. Meehan, President of Jacksonville State University, Jacksonville, Alabama.



Dr. Garrison



Dr. Meehan



Dr. Berry



Plenary Audience

### Plenary Welcome Reception













### ASB Darwin Bicentennial Symposium With Tributes to Edward O. Wilson





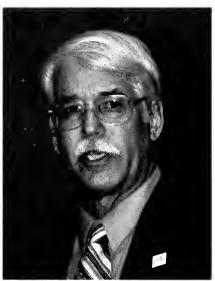
Speakers



James Costa



Andrew Berry



Kenneth Sulak



Howard Neufeld



Conley McMullen



**Edward Wilson** 

# ASB Executive Committee Members at the Annual Meeting in Birmingham, Alabama



Back row standing from left to right: Nicole Welch, Tim Atkinson, John Herr, Randall Small, James Caponetti, and Patricia Cox. Front row seated from left to right: Scott Jewell, George Cline, Thomas Wentworth, Joey Shaw, and Douglas Rayner

## ASB Members at the Annual Meeting in Birmingham, Alabama



Atkinson, Elaine Davis, Danny Gustafson, Bonnie Kelley, Anisha Campbell, Wayne Van Devender, Patricia Cox, Joseph Pollard, From left to right: Michael Held, Thomas Wentworth, Howard Neufeld, Ronald Dimock, Dennis Haney, Michael Dennis, Tim Brian Odom, Donald Roush, Christi Magrath, Thomas Pauley, Kenneth Marion, and George Cline.

### Special Events at the Annual Meeting



ASB Past President's Breakfast, Dr. Michael Dennis, Presiding



Symposium: Biodiversity Informatics



**Human Diversity Workshop** 



ASB Patrons and Exhibitors Breakfast



SABS/BSA Breakfast



**ASB Business Meeting** 

### **Exhibitors at the Annual Meeting**

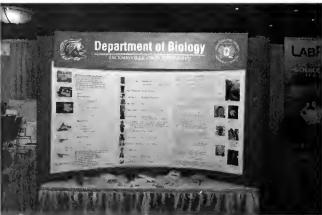






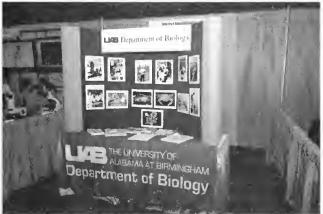






### **Exhibitors at the Annual Meeting**













### **Exhibitors at the Annual Meeting**













### **ASB Paper Sessions at the Annual Meeting**











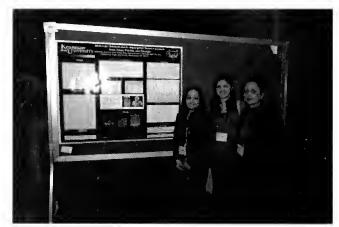


### **ASB Poster Sessions at the Annual Meeting**

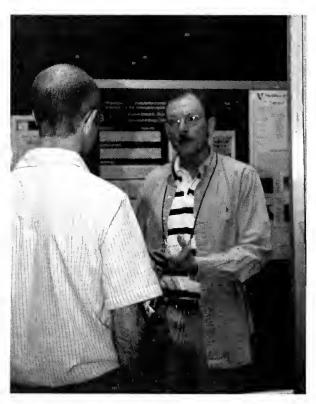












### **ASB Poster Sessions at the Annual Meeting**

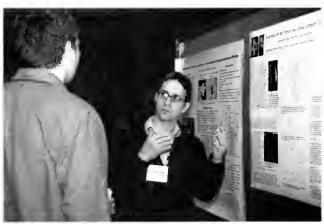












### Beta Beta Beta Poster Session at the Annual Meeting













### Thursday Night Social at the Annual Meeting

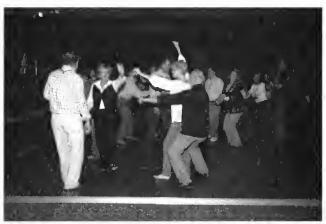












### THE PEMBROKE GROUP AT BIRMINGHAM, ALABAMA

Pictured are faculty and former student of the Department of Biology, University of North Carolina, Pembroke, who attended the 70<sup>th</sup> Annual meeting of the Association of Southeastern Biologists in Birmingham, Alabama.



From left to right: Dr. Andrew Ash, Dr. Bonnie Kelley, Dr. Lisa Kelly, and Ms. Nell Allen (former undergraduate student; now gainfully employed by the North Carolina Zoo as the Rare Plant Curator).

# RESOLUTION OF APPRECIATION TO THE UNIVERSITY OF ALABAMA AT BIRMINGHAM AND JACKSONVILLE STATE UNIVERSITY

**WHEREAS**, The University of Alabama at Birmingham and Jacksonville State University in Jacksonville, Alabama did agree to make all local arrangements for the Association of Southeastern Biologists to hold its 70<sup>th</sup> Annual Meeting on 1 April through 4 April 2009, in Birmingham, Alabama; and

WHEREAS, Local Arrangement Co-Chairs Ken Marion of the University of Alabama at Birmingham and George Cline of Jacksonville State University, Program Chairs George Cline and James Rayburn of Jacksonville State University did an outstanding job of orchestrating the events and organizing the symposia, poster and paper sessions; and

WHEREAS, Chris Murdock of Jacksonville State University and Larry Davenport of Samford University planned field trips, Mark Meade of Jacksonville State University and Terry Richardson of the University of North Alabama organized social events, Taba Hamissou of Jacksonville State University coordinated volunteers, Robert Carter of Jacksonville State University coordinated Beta Beta Beta, James Rayburn of Jacksonville State University coordinated audio-visuals, Brian Toone of Samford University organized electronic submissions, Megan Gibbons and Peter Van Zandt of Birmingham Southern College and Sharryse Henderson of Georgia Highlands College arranged the silent auction, Convention Registration Services handled on-site meeting registration, and Scott Jewell, A2Z Convention Services handled commercial exhibits, advertising, local media, workshops, hotel accommodations, transportation, meeting registration and statistics; entertainment, and

WHEREAS, the affiliate societies, Tri-Beta Southeastern District I, Tri-Beta Southeastern District II, Southeastern Section of Botanical Society of America, Southeastern Chapter of Ecological Society of America, Society of Herbarium Curators, South Atlantic Chapter of Society of Wetland Scientists, and Southern Appalachian Botanical Society were in attendance and contributed to paper and poster sessions, workshops and symposia; and

**WHEREAS**, the citizenry of Birmingham and Jacksonville, Alabama and the administrators at The University of Alabama at Birmingham and Jacksonville State University cooperated to welcome ASB to the cities of Birmingham and Jacksonville; and

**WHEREAS**, the students of The University of Alabama at Birmingham and Jacksonville State University volunteered to assist with the production of the 70<sup>th</sup> Annual Meeting; therefore, be it

**RESOLVED**, that the members of the Executive Committee of the Association of Southeastern Biologists give their sincere thanks and appreciation to all involved in making this an excellent and memorable Annual Meeting that resulted from the cumulative efforts of these individuals and organizations.



## TN-EPPC's Invasive Weed Awareness Campaign

The Tennessee Exotic Pest Plant Council (TN-EPPC) is working throughout 2008 to raise awareness of the negative impacts of invasive plants in Tennessee's natural landscape and seeking partners to join our 2009 Invasive Weed Awareness campaign. As the non-profit state chapter representing regional and national organizations dedicated to the problem of invasive plants, TN-EPPC actively works with state and federal government agencies and public and private landowners to share information and offer advice within Tennessee. We are currently revising our invasive plant species list, developing an early detection and rapid response protocol for new occurrences, and using an online mapping program to compile an accurate picture of present infestations. We are promoting our message to homeowners, gardeners, and other citizens through our native plant brochures, group presentations, and nursery eard initiative. Please view our Web site <a href="https://www.tneppe.org">www.tneppe.org</a> to access these materials.

The Natural Areas Association (NAA) is holding its 35<sup>th</sup> National Conference in Nashville, Oct. 14-17, in conjunction with the National Association of Exotic Pest Plant Councils – our parent organization. Discussions of ecological management will feature an emphasis on invasive exotic species and the anticipated influence of climate change. For more information, please visit <a href="www.naturalarea.org">www.naturalarea.org</a>. TN-EPPC is supporting all aspects of this conference in our home state.

With the NAA eonference as our eenterpiece, our aim is to eulminate a year of education outreach with a state proclamation and joint legislative resolution naming Feb. 22-28, 2009, as Invasive Weed Awareness Week in Tennessee. This state recognition will eoineide with the 10th Annual National Invasive Weed Awareness Week conference in Washington, DC. We want you to join us.

TN-EPPC is contacting various state organizations and groups involved in nature conservation and preservation, gardening, outdoor recreation, land management, and biological education to inform you of our mission and invite you to co-sponsor our 2008 Invasive Weed Awareness proclamation & resolution efforts. We encourage you to share our information with your leaders and membership. All we are seeking is permission to add your name to the list of state entities who recognize the need for more awareness and action regarding invasive plants in Tennessee. The greater the number and diversity of citizens represented, the greater the impact. If your organization would like to lend its voice in support of this campaign or has questions, please contact TN-EPPC board member Margie Hunter, <a href="mailto:mhunter55@eomeast.net">mhunter55@eomeast.net</a>, 615-383-8100. We will keep you apprised of our efforts.

Vigilant citizens aeross the state are our first line of defense in detecting and controlling plant invasions. Working with you, TN-EPPC can reach a significant number of Tennesseans to raise their awareness and enlist their help. Together we share our love and concern for the health and beauty of Tennessee's rich natural heritage and our desire to protect it for future generations.

#### **RESOLUTION OF SUPPORT**

Whereas, the Tennessee Exotic Pest Plant Council (TN-EPPC) is working to raise awareness of the negative impacts of invasive plants in Tennessee, and

Whereas, the TN-EPPC is currently revising its invasive plant species list, developing an early detection and rapid response protocol for new occurrences, and using an online mapping program to compile an accurate assessment of present infestations, and

Whereas, the TN-EPPC is promoting its message of the negative impacts of invasive species to homeowners, gardeners, and other citizens, and

Whereas, the TN-EPPC is seeking partners to join in a 2009 Invasive Weed Awareness campaign,

Therefore, be it resolved that the members of the Association of Southeastern Biologists join with the TN-EPPC and its parent organization, the National Association of Exotic Pest Plant Councils, and other organizations in recognizing the need for more awareness and action regarding invasive plants in Tennessee.

#### **Omitted Abstracts**

The following abstracts were inadvertently omitted from the July, 2009, abstract issue listing.

#### **Poster Presentation**

P48 Victoria E. Brings<sup>1</sup> and Darwin D. Jorgensen<sup>1</sup>. Roanoke College<sup>1</sup> Respiratory function effect of acute bacterial exposure in the American lobster, *Homarus americanus*.

Bacterial infection in some crustacean arthropods effects an immune response involving the cardiovascular and respiratory systems. Hemocytes engulf bacterial cells and are then carried in the hemolymph to the gill circulation where they aggregate as emboli in gill hemolymph vessels. In the blue crab, this process has been shown to cause impaired respiratory function. Our experiments are designed to determine if American lobsters experience a similar physiological response to bacterial infection. We monitored respiratory function, including ventilation and oxygen uptake, in lobsters before, during, and after injection of bacteria or saline. We also measured hemolymph pressure in the infrabranchial sinus and pericardial space to determine the hemolymph pressure drop across the gill circulation (delta P), an indicator of hemolymph flow resistance. Vibrio campbellii was mixed in lobster saline, providing an injection solution with a concentration of 2×10<sup>8</sup> CFUs Vibrio/mL saline. The animals were infused with 0.5 μL/g of total body mass. In the control animals, delta P and oxygen uptake were unaffected by an infusion of a lobster saline solution during the same experiment period. Lobsters infected with Vibrio showed a 50% increase in delta P within one hour of infusion. Concurrently, these animals experienced a 35% decrease in oxygen uptake. This coinciding increase in delta P and decrease in oxygen uptake indicates that bacterial infection inhibits respiratory function in the American lobster. Our data suggest that decreased respiratory capability may result from the embolizing of hemocytes in the gill circulation, which may impede hemolymph flow.

#### **Paper Presentations**

#### Biodiversity Informatics: Progress and Potential in the Southeastern USA

#### Moderators, Zack Murrell and Alan Prather

8:00	Zack Murrell	A regional bioinformatics effort: lessons learned from SERNEC				
8:20	Alan Prather	CollectionsWeb: Building a Community of Natural History Collections				
8:40	Austin Mast	Digital images in the emerging cyberinfrastructure for systematics				
9:00	Andy Bentley	Specify: databasing software capabilities and potential				
9:20	Hank Bart	Recent advances in georeferencing tools for natural history collection data				
9:40	Break					
10:00	Jonathan Armbruster	Databasing efforts at Auburn University				
10:20	Heather Constable	VertNet: The Next Step Biodiversity Revolution for Natural History Museums				
10:40	Jean Freeney	The National Biological Information Infrastructure Role in Biodiversity Informatics				
11:00	Jean Freeney	North American Data Portal of the Global Biodiversity Information Facility (GBIF)				
11:20	Panel discussion					
	ranei discussion					

**Session Description:** Biodiversity informatics has the potential to provide significant contributions to our understanding of evolution, biotic responses to climatic change, ecology and conservation biology. In order to maximize the potential of this burgeoning field, the legacy data held in the life science collections must be made accessible to the greater science community. There are many ongoing efforts to access the life science data housed in museums, colleges and universities, state and federal agencies and in private collections. These efforts fall into three categories: 1) data standards to maximize access, 2)

taxon-by-taxon best practices to facilitate data acquisition, and 3) development of social networks to maximize participation among data providers.

At the global level, groups such as GBIF (Global Biodiversity Infrastructure Facility) and TDWG (Taxonomic Database Working Group) are working to develop standards. At a national level, NBII (National Biological Information Infrastructure) is working to facilitate data acquisition, management and dissemination. Various taxon-based groups have developed networks (HerpNet, Ornis, Manis) that were initiated at the larger museums and are now working to include smaller regional collections. In contrast, the herbaria in the USA have organized into regional networks such as SERNEC, in a "bottom-up" approach to include the smaller collections. All of these social networks are working to facilitate communication and to recruit data providers.

Given the current technologies available to the scientific community, one can easily imagine a time when we have taxonomic, biogeographic and phylogenetic information at our fingertips for all living and fossil taxa. We can also imagine a time when these data layers, draped over geographic, ecological and climatic data layers, could provide a tremendous research tool for the life sciences and many related fields of study.

The historic role that the Association of Southeastern Biologists has played in organizing the life science community in the Southeast USA has also had the impact of developing a very strong social network across the region. The potential for an "all-taxa" database at a regional level is limited by 1) the extent of collections available from an area and 2) the taxonomic expertise available to generate a "clean" dataset. Given the high levels of endemism, large tracts of conserved lands, high numbers of collections and a vibrant taxonomic community, the Southeast is uniquely positioned to develop a high quality virtual museum for the region.

This symposium will provide an overview of best practices and ongoing efforts in biodiversity informatics. The ultimate goal of the symposium is to provide the framework that, when coupled with leadership from ASB, could result in positioning the Southeast to obtain funds and resources to become a global leader in biodiversity informatics.

#### **ABSTRACTS AND CONTACT INFORMATION**

T32 Z. E. MURRELL, D. B. POINDEXTER AND M. W. DENSLOW. Appalachian State University. <u>A regional bioinformatics effort: lessons learned from SERNEC.</u>

In the Information Age, the scientific community has a grand opportunity to amass very large datasets. To take advantage of this opportunity, scientists must develop efficient strategies for acquiring "legacy" data while continuing to generate new data. Within the museum community, collections vary from small personal collections, to teaching collections at various academic institutions, and research collections at universities and museums. These collections vary tremendously in terms of size, level of curation, and resource availability. Guidelines for appropriate data capture are widely available and new methods to increase throughput of data capture are under development. Given this progressive environment, the National Science Foundation funded the SouthEast

Regional Network of Expertise and Collections (http://www.sernec.org/) to help mobilize the informatics effort for the 217 herbaria in the Southeast. We are halfway through this five-year project and can now identify areas of progress and impediment to advancement. One critical aspect of this project is the need for significant assistance from information technologists and computer scientists. Although most attention has been focused on curators, it is clear that there is a need to mobilize IT and CS specialists and to share their expertise. The fundamental issues of scale and efficiency can be addressed in various ways, using fundable units at the state or regional level, or even within specific taxonomic groups. As we wrestle with these issues within one taxonomic domain (i.e., plants), there appears to be significant opportunity for collaboration with other domains within the region to avoid redundancy of effort and expense.

### T33 ALAN PRATHER. Michigan State University. <u>CollectionsWeb: Building a Community of Natural HistoryCollections</u>.

The Research Coordination Network (RCN) for Building a National Community of Natural History Collections (CollectionsWeb) was started in 2007 as a way to build communication among people at natural history collections, researchers using those collections, other programs dealing with issues important to collections, and other stakeholders. CollectionsWeb will host workshops and symposia, develop new web resources, produce reports, conduct a survey of the needs of natural history museums, develop a website (www.CollectionsWeb.org), and help build community in other ways. CollectionsWeb has already hosted one workshop and will host at least four more in the upcoming years. The first workshop was held in East Lansing, MI during spring 2008. Twenty-five collections were represented at the meeting, where we discussed the opportunities and challenges of smaller collections. One of the issues discussed extensively was the difficulties that small collections have in cataloguing their specimens and providing online access to the data. The results from this workshop will be presented, along with a review of other activities of CollectionsWeb.

### T34 AUSTIN R. MAST. Florida State University. <u>Digital images in the emerging cyberinfrastructure for systematics.</u>

Digital specimen images provide much of the information needed for specimen digitization efforts and specimen-based research. Furthermore, they broaden the possibilities for communication and interpretation of information on the web and in components of what is now called cyberinfrastructure. I will draw from my experience with two projects, the Deep South Plant Specimen Imaging Project (DSPSIP) and Morphbank, to explore the current and future role of digital images in digitization efforts and systematic research. The DSPSIP is a collaborative effort among five southeastern US herbaria designed to jumpstart the collection of digital biodiversity information on the East Gulf Coastal Plain Ecoregion (EGCP). Stretching across five states from the Florida panhandle to eastern Louisiana, the EGCP ecoregion is one of the top six biodiversity hotspots in the United States. The DSPSIP has imaged over 85,000 plant specimens from the ecoregion to date and designed tools to make the specimen imaging workflow more efficient. Morphbank (www.morphbank.com) is a mirrored repository of biological images with functionality for collaborative research in systematics. The system currently hosts 220,000 public images, and many more unpublished images. When the plant specimen images from the DSPSIP are added to Morphbank, it will provide a single location for images of every taxon in the EGCP flora and allow users to create virtual loans of potentially thousands of specimens from multiple institutions with a few clicks of the mouse. I will demonstrate the "image collection" functionality in Morphbank designed to facilitate study of this type of large virtual loan.

ANDY BENTLEY. University of Kansas. <u>Specify: databasing software capabilities</u> and potential.

Specify is a biological database application for museums and herbaria which processes specimen information for computerizing holdings, manages collection management transactions, and mobilizes species occurrence data to the web. Our latest release, Specify 6, is a wholly-new implementation coded in Java and designed to run identically on all three workstation environments--Windows, Mac OS X, and Linux. Specify versions for each platform (and the source code which is offered under an open source license agreement) are available at no cost from the Project web site. The Project is supported by the US NSF and the University of Kansas Biodiversity Institute. Specify 6 incorporates many significant changes, from its intuitive and highly-usable drag-and-drop user interface to many new functions and capabilities designed to streamline routine collections data tasks while preparing and validating data for biodiversity community networks. Specify 6 has numerous enhancements over Specify 5.x, including support for using record sets as subsets of the complete catalog for various types of processing, such as: online georeferencing, label and report production, and importing and exporting records. Specify6's data model has been expanded and enriched to provide robust support for multiple collections within a single database, stratigraphic data, field notebook information, file attachments, GUIDs, hierarchical storage locations, data entry and uploads through the Specify WorkBench and Excel, collecting trip data, repository agreements, accession logging, conservation treatments, collection object containers, and many more collections data issues. As with Specify 5, the Specify 6 form system is highly customizable, and Specify 6 comes with a robust label and report generator. The most important core advance with Specify 6 however, in addition to its long list of capability enhancements, is the program's modular architecture designed for functionality plug-ins and co-development collaborations. With the availability of specialized plug-in modules, Specify's research capabilities will be extended by online web-service links to other biodiversity data research community servers. Specify's soul as an open-source, internet-capable, integration platform will transform biological collections computing. This presentation will highlight Specify 6 and illustrate some its innovative features.

HENRY L. BART AND NELSON E. RIOS. Tulane University Museum of Natural History. Recent advances in georeferencing tools for natural history collection data.

Over 2.5 billion biological specimens are archived in the world's natural history museums and herbaria. Efforts are underway to computerize and network data associated with these collections for use in biodiversity research. Automated georeferencing tools have been developed to translate textual descriptions of collection localities into geographic coordinates. One such tool enjoying wide use in the natural history collection community is GEOLocate. In this paper, we describe recent upgrades to the GEOLocate software toolkit, including collaborative georeferencing, user-defined locality expressions and taxonomic footprint verification. The advancements have the potential to greatly reduce the workload of geo-coordinate verification.

T37 JONATHAN W. ARMBRUSTER. Auburn University. <u>Databasing efforts at Auburn University</u>.

Biodiversity informatics: Progress and Potential in the Southeastern USA. The databasing efforts at Auburn University have been through a hodgepodge of methodologies and programs. The fish and aquatic invertebrate collections use Filemaker and served on the University SQL server. The fish collection is 100% cataloged except for a small backlog,

and represents 50,000 lots and 650,000 specimens. The aquatic invertebrate collection has about 25,000 lots with 95% of the molluscs cataloged, 75% of crustaceans, and 25% of its insects. The herpetology collection uses Microsoft Access, and is served over the internet by Herpnet. 99% of the approximately 44,000 specimens are cataloged. The Herbarium uses Specify, and is not accessible via the internet, although there are plans. The Herbarium has approximately 83,000 specimens of vascular plants, bryophytes, fungi, and lichens, with approximately 85% databased. The mammal collection has about 5,000 specimens cataloged using Dbase and is fully cataloged, and the ornithology collection has about 2,000 specimens cataloged in Microsoft Excel; neither is available online. The living collection of plants at the Davis Arboretum that is cataloged via Microsoft Access; about 20% of the collection is databased, and collection data includes where the plants are located on a map. Mainly to be discussed will be the fish collection, whose Filemaker database is relational and contains species look-up fields that fill in all taxonomy for Alabama fishes, Family fields that fills in taxonomy to family for all non-Alabama fishes, a photo file, and loan information from separate databases.

### T38 HEATHER CONSTABLE. University of California, Berkeley. <u>VertNet: The Next Step Biodiversity Revolution for Natural History Museums</u>.

VertNet is the next step in the evolution of distributed database networks for natural history collections. Currently, there are 104 museums and institutions globally, together sharing over 34 million vertebrate specimen records and 37 million bird observations online through 4 networks divided by biological discipline: MaNIS manisnet.org (mammology), HerpNET www.herpnet.org (herpetology), ORNIS olla.berkeley.edu/ ornisnet/ (ornithology) and FishNet2 fishnet2.net (ichthyology). These projects mobilized large collaborative efforts to digitize museum catalogs, network these databases to a searchable portal and add geospatial data for the mapping of specimen localities. With the tandem development of BioGeomancer http://biogeomancer.org, the museum and biodiversity community now has the ability to research and enhance their collections with verifiable geospatial data at an exponentially increasing pace. These projects have revolutionized biodiversity informatics and created a momentum to further develop these conservation research tools. By uniting MaNIS, HerpNET, ORNIS and FishNet 2 under the umbrella of VertNet, all stakeholders will capitalize on economies of scale. By developing appropriate standards and protocols for georeferencing and data-sharing, and allowing providers to control access according to local policies, the benefits of participation are clear and measurable. The implementation of new technologies will maintain the integrity of the networks and provide opportunities for more communities to easily participate. This integration will allow for new data visualization, dynamic mapping and on-the-fly analysis tools, which are currently under development.

### S. JEAN FREENEY. US Geological Survey. <u>The National Biological Information</u> Infrastructure Role in Biodiversity Informatics.

Biological Information presents a tremendous challenge for the computer science community. Biological information varies in format, content, and distribution. Information may pertain to a particular species or a specific ecosystem, which often includes multiple species. The complexity and uniqueness of each individual species or ecosystem do not easily lend themselves to today's computer science tools and applications. The National Biological Information Infrastructure (NBII) (http://www.nbii.gov) was established in 1993 to address the challenges that the biological enterprise presents. The NBII is designed to address these issues on a national scale and regional scale within the United States, and through international partnerships abroad. This session will discuss NBII's role in facilitating access to biological information.

U. S. Geological Survey, National Biological Information Infrastructure (NBII), 12201 Sunrise Valley Dr., Reston, VA 20192, US

S. JEAN FREENEY. US Geological Survey. <u>North American Data Portal of the Global Biodiversity Information Facility (GBIF).</u>

GBIF is an international organization, working to make the world's biodiversity data accessible everywhere in the world. Data providers from around the world share data on over 163 million specimens through the GBIF Portal. Over 48 million of those specimens are from the US and approximately 8 million are from the southeast United States.

GBIF and its many partners work to mobilize the data, and to improve search mechanisms, data and metadata standards, web services, and the other components of an Internet-based information infrastructure for biodiversity. In order to achieve more stable availability of the Portal and improved efficiency, GBIF has established mirror sites, full replicas of the GBIF dataset, on three continents. The North American site is hosted by the National Biological Information Infrastructure (NBII), the U.S. Node for GBIF and the Oak Ridge National Laboratory. This partnership also supports this global initiative by hosting workshops, supporting tool development, and promoting standards.

This presentation will provide greater details of the implementation of the U.S. mirror site and additional resources available through the U.S. Node.

U. S. Geological Survey, National Biological Information Infrastructure (NBII), 12201 Sunrise Valley Dr., Reston, VA 20192, US



Silent Auction.

#### **ASSOCIATION OF SOUTHEASTERN BIOLOGISTS 2009**

#### TREASURER'S REPORT FY 1 JANUARY-31 DECEMBER 2008

#### I. BEGINNING BALANCE

\$45,049.00

#### II. RECEIPTS

\$154,934.00

Southeastern Biology Receipts

\$23,055.00

Membership Dues

\$23,055.00

**Enrichment Fund Receipts** 

\$6,975.00

**Enrichment Contributions** 

\$6,975.00

\$109,335.00

\$12,228.00

Interest

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**ASB Annual Meeting Receipts** 

\$124,904.00

Registration
Exhibits

Silent Auction \$3,341.00

#### III. TOTAL RECEIPTS & BEGINNING BALANCE

\$199,983.00

#### IV. DISBURSEMENTS

#### Southeastern Biology Expenses

\$(26,452.00)

Publication \$(16,479.00)

SE Biology 55(2) \$(4,340.00) SE Biology 55(3) \$(7,145.00)

SE Biology 55(4) \$(4,994.00)

Miscellaneous Publications \$(976.00)
Office Expenses \$(6,882.00)
Web Site \$(2,075.00)
Refund \$(40.00)

**Enrichment Fund Expenses** 

\$(10,093.00)

Outstanding Biology Teacher --Bank Charges ---

Losses \$(10,093.00)

**ASB Annual Meeting Expenses** 

\$(120,181.00)

 Registration
 \$(26,445.00)

 Exhibits
 \$(1,544.00)

 Meeting
 \$(77,792.00)

 A2Z Convention Services
 \$(14,400.00)

**TOTAL DISBURSEMENTS** 

\$(156,726.00)

V. ENDING BALANCE

\$43,257.00

#### **ASB ENRICHMENT FUND**

#### 1 JANUARY - 31 DECEMBER 2008

l.	BEGINNING BALANCE	\$45,049
II.	RECEIPTS  1. Contributions \$6,975  2. Interest 0% TOTAL RECEIPTS	\$6,975
Ш.	TOTAL RECEIPTS AND BEGINNING BALANCE	\$52,024
IV.	DISBURSEMENTS  1. Outstanding Biology Teacher Award  2. Bank Charges  3. Losses  -19.40% \$(10,093)  TOTAL DISBURSEMENTS	
V.	ENDING BALANCE	\$41,931
VI.	NET INCREASE	\$(3,118)

# ASSOCIATION OF SOUTHEASTERN BIOLOGISTS EXECUTIVE COMMITTEE MEETING APRIL 2009

#### MEMBERSHIP OFFICER'S REPORT

#### 2009 ASB DECEASED MEMBERS

William Ray Bowen Perry C. Holt Carroll Wood

James N. Dent Mark MacKenzie Cyrus Wymer Wiser

Walter R. Herndon Larry T. Wimer

#### 2009 ASB EMERITUS STATUS REQUESTS

Michael Baranski John P. Harley Ellen W. McLaughlin Les Brown Dennis D. Horn Henry W. Robison Carolyn Dial Francis E. Nussbaum Janice Swab Steve Dial

#### **CURRENT MEMBERSHIP**

	Apr 05	Mar 06	Mar 07	Apr 08	Mar 09
Complimentary	20	20	27	10	10
Contributing	11	11	8	8	6
Emeritus	65	73	74	65	65
Exhibitor	?	?	35	48	58
Family	33	32	36	27	22
Library	56	56	52	49	49
Life	11	25	38	45	56
Patron	7	7	7	7	9
(Life & Patron	2	2	2	2	2)
Regular	787	892	821	711	672
Student	308	517	559	403	303
Sustaining	4	2	2	2	0
TOTAL	1,302	1,635	1,659	1,375	1,252

ASB's total membership of 1,252 as of March 10, 2009 falls 123 members short of last year's total of 1,375. By far the greatest contribution to this decline was in the decrease in Student membership (over 81% of the decrease). Life membership, Patron, and Exhibitor categories increased by a total of 23, representing substantial increases in these areas. The membership gains were offset by losses in Family and Contributing membership (-7), Regular membership (-39), and Student membership (-100).

The Membership Officer has met and interacted with the Membership Benefits Committee regarding membership issues. In an effort to identify ways to increase membership and participation in ASB, a survey is being developed to help identify programs and benefits of membership that enhance the perceived value of membership in ASB. The survey will be finished and ready to administer soon.

Respectfully submitted,

Terry Richardson ASB Membership Officer

#### Association of Southeastern Biologists

#### **ASB ENRICHMENT FUND CONTRIBUTORS 2008**

Adams, Jennifer P. Atkinson, Timothy A. Awong-Taylor, Judy Baird, Richard E. Beaird, Janis Birkhead, William S. Caponetti, James D. Chandler, Clay M. Cline, George R. Dennis, W. Michael DePoe, Marie J. Dimock, Ronald V. Drapalik, Donald J. Hardin, James W. Herr, John & Lucrecia Hull, James C. Kelly, Lisa Marion, Ken Martin, Virginia L. Peet, Robert K. Pendley, Marilyn S. Perkins, Fern Ramseur, George S. Schenk, Michael P.

Schmalzer, Paul A.

Sekora, Nick Shipes, Barbara G. Shure, Donald J. Sickel, James B. Webb, David H. Wentworth, Thomas R. Winstead, Joe E. Wiseman, D. Reid 304 Prettyman Dr. #10405 Carolina Biological Supply Co. 2027 Gainsborough Dr. Mississippi State University University of West Alabama Columbus State University University of Tennessee 1016 Cunningham St. Jacksonville State University 330 W Canton Ave. 100 Curve Dr. Wake Forest University 620 Honeysuckle Lane 204 Furches St. University of South Carolina 935 Metfield Rd. University of North Carolina University of Alabama 219 Harrells Hill Rd. University of North Carolina Caldwell College 328 Oak St. 735 University Ave. University of Mississippi Medical Center

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#### THE ASSOCIATION OF SOUTHEASTERN BIOLOGISTS

#### PAST PRESIDENT'S ADDRESS

## Biological Threats to the Integrity of Southern Appalachian Forests (And What ASB Can Do to Help)

#### THOMAS R. WENTWORTH, PH.D.

I will begin this address by stating that serving the Association of Southeastern Biologists (ASB) as its president during 2008-2009 was an experience that I will always treasure. It was an honor to be chosen to lead an outstanding group of scientists joined in the common goal of promoting biology as a science in our region and beyond. It was a joy to work with a superb group of volunteer members who ably served the association as its officers, committee chairs and members, appointees, and in numerous other ways.

As most readers know, for many years it was customary for the past president to present an address at the annual meeting's Friday evening banquet. Because the banquets have become increasingly dedicated to presentation of awards and other recognitions in recent years, ASB now offers each past president an opportunity to publish an address in *Southeastern Biology*. What follows are my thoughts on a serious problem that afflicts the spectacular forests of the region we call home....

Late in the afternoon of July 14, 2009 I stopped at a favorite overlook on US 441 on the Tennessee side of Great Smoky Mountains National Park. The stop was occasioned by the biennial offering of a summer field course entitled "Forest Ecosystems of the Southern Appalachians" that I was teaching through the Highlands Biological Station with my colleagues, Drs. Stephanie Jeffries and We were completing a long day of visits to high-elevation Peter White. ecosystems in the Smokies, and we wanted our students to see the remarkable vista afforded by this overlook, which is formally referred to as the Carlos Campbell Overlook. Some ecologists familiar with the Smokies call this the Whittaker Overlook, however, because of its association with Robert H. Whittaker, author of the classic monograph on vegetation of the Great Smokies (Whittaker, 1956). This is a wonderful place in the Smokies to see, in one vista, most of the natural communities of the park, arrayed in their positions relative to gradients of elevation and topographic moisture. It was a beautiful summer afternoon, and, looking eastward up a deep valley toward Balsam Point on a shoulder of Mt. LeConte, we could readily see the diverse communities about which Robert Whittaker wrote so eloquently: spruce-fir forests on the high summits, with forests dominated by eastern hemlock (Tsuga canadensis) approaching in the deep ravines just below; various high-elevation mixtures of

"northern hardwoods"; mixed mesophytic cove forests in the broader and more gently sloping ravines below the hemlock; a large heath bald on a south-facing ridge below Balsam Point; two prominent pine stands on mid-elevation west-facing ridges; and the extensive matrix of varied oak-dominated forests in which the other communities are embedded. In the foreground, we could see where the oak-dominated forests give way to a younger, even-aged forest dominated by tulip tree (*Liriodendron tulipifera*), the legacy of an earlier time when the arable land of lower elevations was cleared and farmed by settlers.

As we discussed the beautiful vista and its lessons of vegetation/environment relationships, a very troubling aspect also struck us: even without binoculars, it was clearly evident that several of the natural communities were in serious trouble, as evidenced by extensive tree mortality. On the high summits, the forest was studded with the graying corpses of Fraser fir (Abies fraseri) trees that had succumbed to the onslaught of a tiny bark-feeding insect, the balsam woolly adelgid (Adelges piceae). The eastern hemlock forests below also had a ghostly appearance, with most of the mighty hemlock dying or already dead, the result of an infestation by another tiny insect, the hemlock woolly adelgid (Adelges tsugae). On the ridges below, the pine forests were filled with the bleached but still standing dead stems of the dominant trees, pitch pine (Pinus rigida) and Table Mountain pine (P. pungens). In plain view for anyone willing to look was clear evidence of the devastation of three of the most significant forested ecosystems of the region, the result of extensive mortality of their foundation species. To view such direct evidence of decline of a single forested ecosystem would be a source of considerable concern, but to see the simultaneous unraveling of three major ecosystems was inconceivable. As we reflected on the apocalyptic destruction spread before us, it was not long before we began to review the role that humans have played in bringing our mighty southern Appalachian forests to such a sad juncture. In the case of the Fraser fir, the balsam woolly adelgid was imported from Europe and reached the southern Appalachians in the 1950s (Ragenovich and Mitchell, 2006). The effect of the balsam woolly adelgid on our endemic firs may have been exacerbated by stresses on the trees brought about by a variety of anthropogenic effects on air quality, including acidic deposition and high ozone levels (Hain, 1987). In the case of eastern hemlock, the hemlock woolly adelgid is an exotic insect pest from Asia, introduced to the United States in the 1920s (Save our Hemlocks, 2009) and reaching the Smokies around 2002 (National Park Service, 2008). The cause of mortality of the pines is a complex interaction of drought, outbreaks of southern pine beetle (Dendroctonus frontalis), and fire suppression (White, 1987). While the first two of these factors are natural, the third is distinctly anthropogenic.

I have taken some time to introduce the reader to three obvious and catastrophic changes affecting southern Appalachian forested ecosystems, but

equally troubling are other changes not immediately visible to those who enjoy the view at the Carlos Campbell Overlook. Whittaker himself witnessed the devastation caused by the chestnut blight (Cryphonectria parasitica), which had already decimated the American chestnut (Castanea dentata) when he was doing his inventory work in the Smokies in the late 1940s (Whittaker, 1956). American beech (Fagus grandifolia) is being affected by beech bark disease (Nectria spp.), flowering dogwood (Cornus florida) has been decimated by dogwood anthracnose (Discula destructiva), butternut (Juglans cinerea) has fallen prey to butternut canker disease (Sirococcus clavigigenti-juglandacearum), and American elm (Ulmus americana) is subject to Dutch elm disease (Ophiostoma ulmi and O. nova-ulmi), to list some better-known examples. All five of the aforementioned diseases are caused by fungal pathogens known or believed to be of exotic origin (Houston and O'Brien, 1983; Carr and Banas, 2000; Schlarbaum et al., undated). Other biological threats to the integrity of southern Appalachian forests are already at our doorstep. Will gypsy moth (Lymantria dispar) devastate our forests as it has forests to our north? Will emerald ash borer (Agrilus planipennis) eliminate our mighty ashes (Fraxinus spp.)? As I have come to fully appreciate the magnitude of the changes just described, I have realized three things: (1) Our southern Appalachian forests are undergoing profound changes in their composition, resulting from decimation of one foundation species after another; (2) the time frame during which these changes have occurred, measured in decades, represents an almost infinitesimal "blip" in the long evolutionary and ecological history of these forests, spanning many tens of millions of years; and (3) in every case mentioned, human intervention, most often through introduction of exotic pests, is the direct cause of the devastating changes now underway.

Being a fundamentally optimistic person, I left the Carlos Campbell Overlook that day wondering what might be done to stem what seems to be an inevitable rising tide of devastation afflicting our forests. Setting aside other troubling issues, such as loss of forested habitat and the resulting fragmentation of the remaining forested patches, I reflected on what we, as citizens and scientists, might do to reduce the risk of further devastation of our forests by exotic pests. Three approaches to risk reduction occurred to me: support of governmental programs, individual actions, and work through non-governmental organizations like ASB. I'll conclude by reviewing each of these approaches briefly.

There is much that can be accomplished by governmental agencies, and we should support such efforts whenever possible. As one example, the agency responsible for preventing importation of invasive exotic plants and harmful plant pests to the United States is the US Department of Agriculture's Animal and Plant Health Inspection Service (USDA-APHIS, 2007). APHIS is currently developing new quarantine regulations for importation of plant nursery stock. These regulations, when implemented, will greatly reduce the risk of imported

plants becoming invasive themselves or serving as vectors for dangerous plant pests. APHIS is also improving its ability to conduct risk analyses for plants and plant pests and working to limit pest problems at their points of origin, rather than at their points of entry to the United States. The development of early warning systems and more effective responses to introduced pests will complement approaches aimed at preventing introduction of invasive plants or plant pests. All of these approaches are being implemented in ways that should not unduly restrict international trade in low-risk plant imports (USADA-APHIS, 2005). We should all be supportive of such efforts.

At the individual level, there are many things we can do to reduce the importation and/or spread of exotic pests. As gardeners or landscapers, we can use native and/or locally sourced plant materials for gardening and landscaping when appropriate. When working with exotic plant materials, we should insist that these be obtained from reputable sources known to be conforming to applicable laws and regulations related to their importation. Firewood consumers should also be sure that the wood they burn is locally sourced to prevent spread of wood-infesting pests like emerald ash borer (USDA-APHIS, 2009). Finally, since many of us are scientists who frequently encounter plants and/or their potential pests in a variety of settings, we can assist governmental agencies by actively reporting new pests or infestations as soon as these are detected. Unfortunately, some researchers have delayed reporting a new pest or disease to appropriate authorities until they have published their research findings. Because of the long delay typically associated with publication, a problem that might have been readily addressed could become intractable by the time information about it appears in the literature.

Finally, we can support the efforts of ASB to educate the public and to influence managers and decision-makers in ways that will reduce existing threats from exotic pests and prevent future threats from developing. As ASB's 2008-2009 president, I was impressed by the influence that ASB can bring to bear on significant biological issues through its educational and other activities. During my tenure as president, ASB developed a resolution in response to a request from the Tennessee Exotic Plant Pest Council (TN-EPPC) for support of their Invasive Weed Awareness Campaign. The resolution was the result of a cooperative effort by ASB's Conservation and Executive Committees; it was approved by an overwhelming majority of members voting in a special referendum. Through its resolutions and other official statements, ASB can lend support to other organizations working to limit threats by exotic pests, and I am certain that we will continue to develop such resolutions and statements in the future. By supporting workshops and symposia at our annual meetings about biological threats to the integrity of natural ecosystems, we can also better educate the public and ourselves. Finally, ASB can play a pivotal role as a source of expert knowledge on such threats.

While I believe that our southern Appalachian forests are in peril from the introduction of exotic pests, I am hopeful for the future. Increased awareness of the problems posed by exotic pests and efforts to address these problems will greatly benefit from our support of governmental agencies, our personal actions, and our participation in ASB's efforts. I expect that you, as members of ASB, will be hearing more about ASB's efforts in this regard, and I hope you will become involved!

#### **Acknowledgments**

I thank Dr. Ernest D. Seneca for first introducing me to Great Smoky Mountains National Park and the Carlos Campbell Overlook. I am also deeply indebted to many other people who have introduced me to both the biological diversity and threats to that diversity in the southern Appalachians. In particular, I thank my co-instructors of "Forest Ecosystems of the Southern Appalachians," Drs. Stephanie B. Jeffries, Robert K. Peet, J. Dan Pittillo, and Peter S. White, for all they have taught me about our beautiful southern Appalachian forests. Dr. Christina Devorshak was especially helpful in bringing me up-to-date on the programs of USDA-APHIS. And, although the material presented in this address is mostly based on knowledge I've absorbed during 34 years of conducting research in southern Appalachian forests, I found the following references particularly useful:

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Carlos Campbell Overlook, Great Smoky Mountains National Park.

### ASB 2009 Darwin Bicentennial Symposium: Its History and Purpose

#### Robert Y. George Ph.D.

Professor Emeritus and President and CEO, George Institute for Biodiversity and Sustainability, 1320 Vanagrif Court, Wake Forest, North Carolina 27587 www.GIBSconservation.org

The debate about Darwin and evolution continued to rage at the centenary of Darwin's death in 1982 but now in 2009 at the bicentennial of Darwin's birth in February, 2009, there arose a deep concern among conservation biologists. They are concerned that the time has come to do something serious soon to curtail the rapid extinction of plant and animal species (33% may go extinct in this 21st century!). This rapid biodiversity decline is primarily caused by human exploitations of the land and aquatic environment (lakes, rivers and the oceans). The culprit is now identified as *Homo sapiens*. Deforestation, pollution and excessive emission of carbon dioxide induced severe threats to the very survival of plant and animal species and endangered Earth's ecosystems.

During my tenure as chair of the ASB conservation committee two important resolutions came about, one dealing with the "Issue of Invasive Species" and another focusing on "The Status of Endangered Species". In recent decades, largely as a consequence of climate change, resulting in sea-level increase, ocean acidification and thermal stress interfering with the physiology of stenothermal species in the tropical and polar environments. There is a flux of species moving north in recent decades. Despite all these adverse impacts on our environment, there are still skeptics who think that global warming is a hoax. This is abundantly clear from the April 2008 report entitled "Nature, Not Human Activity, Rules Climate", Summary of Policy Makers: Nongovernmental International Panel on Climate Change (Published by the Heartland Institute, Chicago).

ASB is dedicated to nature conservation and the annual meetings bring numerous undergraduate and graduate students and faculty from the member institutions. I felt that there is a great opportunity for ASB to organize a symposium in memory and honor of Charles Darwin on the 200<sup>th</sup> anniversary of his birthday. Darwin was born on February 12, 1809. I took this idea to the ASB President Dr. Thomas Wentworth (North Carolina State University) and we both sat over lunch to plan the Darwin Symposium on a nice spring day in Raleigh, North Carolina. Tom advised me to team up with Dr. James Costa (Western Carolina University) to organize the ASB Darwin symposium. Jim readily agreed to work with me in this endeavor. In the following pages, let me narrate the events and outcome, both in historical perspectives and from the point of view of the purpose of the Darwin symposium.

I approached Prof. James Caponetti of the University of Tennessee in Knoxville and the editor of the ASB journal *Southeastern Biology* about writing an article about the plans for the Darwin Symposium. His spontaneous response

resulted in my article entitled: "Darwin Bicentennial: How can ASB biologists make Darwin proud?" *Southeastern Biology* Vol. 55, No. 4: 446-453. The idea of the Darwin symposium in Birmingham, Alabama came about not only to reemphasize Darwin's original theory of "natural selection" as a mechanism or driving force for evolution but also to focus on what is it we scientists can do to conserve the prevailing biodiversity of life on earth by conservation of ecosystems both in land and seas.

Let us also read the last paragraph of Darwin's "Origin of Species": in Darwin's words: "While this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most <u>beautiful</u> and <u>wonderful</u> have been and are being evolved". The goal of the symposium, therefore, revolves around our commitment to save these beautiful and wonderful species that are now threatened and endangered by human activities.

## CHARLES DARWIN AS A GENIUS AND AN APOSTLE OF SECULAR HUMANISM

In US Academic Institutions, both public and private (including the Ivy League Schools such as Harvard, Princeton, Yale University etc.) biology departments offer a basic biology course for non-biology-major students to expose them to the basic concepts of biology. In my conversations with Prof. Edward Wilson of Harvard, who taught such a course as I did for many years at the University of North Carolina at Wilmington. When the time comes to teach Darwinism, the students confront professors and question the validity of the 'natural selection theory' that Darwin, along with Alfred Russell Wallace (a naturalist, 14 years younger than Darwin) advanced as one of the most important biological discoveries, explaining the driving force or mechanism of evolution. Darwin in his prolific writings extended the role of natural selection to the level of *Homo sapiens*, culminated in his famous book on "The Descent of Man-And The Selection in Relation to Sex", published in 1871. The final chapter 7 on Part I 'On the Descent of Man' of this book deals with "On Human Races".

Variation within a species, plant or animal, is really the fundamental theme of Darwin's quest on speciation and the human varieties, even erroneously considered as subspecies by some 19th century biologists. Historically, the human varieties, with the doctrine of inequality of races raised controversial political and social issues, particularly in the United States and more so in the South. Prof. Ed Wilson told me during a lunch at the Harvard faculty club that he is a "secular humanist". Darwin, who firmly believed in equality of races, was essentially a secular humanist. Amongst all living naturalists today, Edward Wilson is undoubtedly the true disciple of Charles Darwin but the striking difference revolves around their respective paths of higher education. Darwin, as a field naturalist, neither learned biology within the class rooms and reading the text books nor by teaching hundreds of undergraduate students or training dozens of graduate students but Darwin deciphered nature in the islands of Galapagos. He also discovered natives and their primitive cultures in South America and elsewhere whenever he had extensive sojourns on the land, avoiding seasickness on the rolling HMS Beagle.

In the ascending journey of higher education, a biologist typically goes through Bachelor (B.S.), Master (M. S.), Doctoral (PhD). Degrees in one of the disciplines of biology and then enters the professional field either in research or teaching. Darwin did not do this. Wilson did. Then in an academic career in the post-doctoral years, a biologist climbs the ladder in steps from research associate, assistant professor, associate professor and full professor and at one point getting permanent tenure. Darwin did not do this.

Charles Darwin, despite his father's persistent efforts to make him a medical doctor and then a priest, came to Cambridge (England) from Edinburgh (Scotland) and was profoundly influenced by two scholars. One was Prof. Adam Sedgwick (a priest and also a geologist by training) and the other was Prof. John Henslow (a field-oriented botanist and a mineralogist). In this period in early 19<sup>th</sup> century, the practice of science was condemned as antireligious activity. The two professors founded the "Cambridge Philosophical Society" which encouraged academic scholars to report on their findings in natural studies. This is how Darwin got educated in natural history, but not by taking degrees in biology.

In his final year in Cambridge, Darwin was deeply impressed by the German explorer Alexander von Humboldt. Darwin confessed that "Humboldt's Personal Narrative" influenced him so much as he expressed it as follows" "Stirred up in me a burning zeal to add even the most humble contribution to the noble structure of natural science". Not too far from the Humboldt Current (named after Alexander von Humboldt) off Peru and Ecuador, east of the Galapagos Islands, Darwin discovered the giant tortoises.

While voyaging off Valparaiso, Chile aboard the US research ship ELTANIN en route to Antarctica. I had a unique encounter with the giant Humboldt squid (named after Alexander von Humboldt). I sent my under-water camera to photograph the sea floor at 6400 m in the Peru-Chile Trench, I was puzzled that the camera started taking photos at 1800 m and 36 frames were shot in one hour. I brought the camera up and found out that a giant Humboldt squid Dosidicus gigas took really 36 self-portraits of itself by pulling the trigger. These squids are now extending in the recent years from off Peru to as far north as California and even to Alaska. One theory is that this northward invasion is caused by global warming phenomenon. Biologists should respect Darwin's statement about the "beautiful and wonderful species" such as the giant squids. Their intrusion into an alien ecosystem also brings about changes in the foodchain complex of the ecosystem (Field J.C. et al, 2007). This squid species is important to be studied as an invasive species and so also the numerous other species that are endangered or threatened as vulnerable species in vulnerable marine ecosystems (VMEs). I bring up this discussion to emphasize the purpose of the ABS 2009 Darwin Bicentennial Symposium in Birmingham, Alabama. Let us now look at Darwin's background.

Charles Darwin was born with abundant earthly wealth as evident from the photo below of the mansion where he was born. After his return from the famous voyage of *HMS Beagle*, Darwin, despite his ill health, wrote book after book to advance his theories about an array of topics in the area of evolutionary biology. Darwin also discovered the atolls of the Cocos Islands. He put forth the theory that these islands emerged and then sank while the sea level increased. Darwin

wisely advanced the theory that these atoll coral islands and tropical coral reefs evolved, as explained in his subsidence theory.

In 2005, David Dobbs authored a book entitled: "Reef Madness: Charles Darwin, Alexander Agassiz, and the Meaning of Coral" (Pantheon Book Publishers). Louis Agassiz, who moved to the Harvard University in the United States from Switzerland in 1846 when Darwin was 37 years old, became a strong opponent of Darwin's origin of Species theory and coral reef theory since he was a believer of God's Creation of all life. In the course of time Museum of Comparative Zoology (MCZ) at Harvard despite the founder Louis Agassiz's opposition to Darwin, spawned world renowned Darwinian disciples like Ernst Mayr, Stephen Gould and Edward O. Wilson, our distinguished speaker at the ASB Darwin Symposium in Birmingham, Alabama (where Wilson was born, spent his early childhood and went through secondary and higher education).



Charles Darwin was born in this mansion in Shrewsbury, England on Feb. 12, 1809.

Charles Darwin grew up in an affluent atmosphere and never encountered financial problems with a lucrative family income and rich heritage!

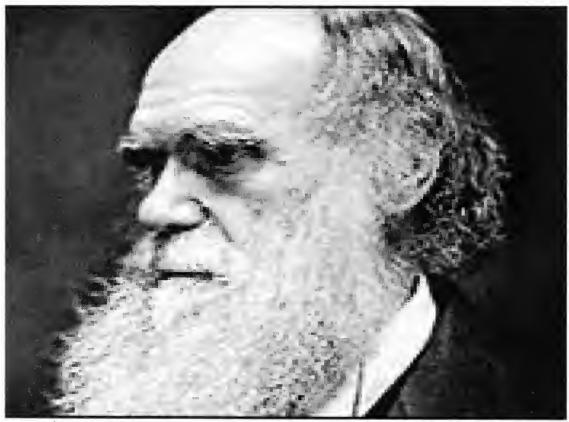


Likewise, in America Alexander Agassiz, the son of the notorious biologist and teacher Louis Agassiz, inherited his father's fortunes and fame. He owned a copper mine and the wealth from the mine made him to move from the Government ship ALBATROSS to his own research vessel BLAKE to study deep-sea life and their origin. I was so intrigued by Alexander Agassiz's contributions on deep-ocean zoology, I named a species of deep-sea isopod

Serolis agassizi in his honor (George, 1986). Alexander Agassiz, joined by the Scottish oceanographer John Murray of the world-famous *Challenger* expedition, questioned Darwin's subsidence theory for the origin and evolution of atoll reef corals and labeled Darwin's theory as just a "pretty story". They advanced an opposing view that "in the tropical seas enough plankton floated, lived and died in the course of millions of years and the rain of organic debris over geologic time created the tropical reefs".

The pretty story of Alexander Agassiz never made it to print. Darwin never saw the opposing theory published but he was aware that Agassiz presented his opposing view in his lectures. In 1910, 28 years after Darwin's death, Alexander Agassiz met John Murray in London and lectured on his theory of atoll origin disagreeing with Darwin. On his return journey, Alexander died in his sleep five days after the ship sailed off Southampton. His theory was never published and his son George Agassiz remarked: "Excellent example of his dad's habit of carrying his work in head until the last minute".

Darwin was proven right and Agassiz wrong in 1951 when US geologists discovered while surveying Pacific Marshall island atoll reefs, just prior to the hydrogen bomb testing. Drilling and piston coring solved the mystery. Darwin wisely concluded that the reefs accumulated atop their sinking foundations. The 1951 drilling in the atoll reefs went through several hundred feet (4200 feet to be precise) before hitting the underlying limestone. This finding proved the power of Darwin's intuition in formulating his theory without experimental evidence. There was no continental-drift theory or DNA double helix theory when Darwin lived but his original ideas of speciation and evolution is now backed by evidence from molecular biology. Darwin, undoubtedly, was genius like Albert Einstein or Isaac Newton.



Charles Darwin lived to the age of 73 and died on April 19, 1882.

The British science journal 'Nature' devoted a number as "Darwin 200" to celebrate the bicentennial celebration, with a focus on what evolution has done to human nature. This special edition succinctly summarized about Darwin as follows: "No single researcher has since matched Darwin's collective impact on natural and social sciences, on politics, religions and philosophy; on art and cultural relations".

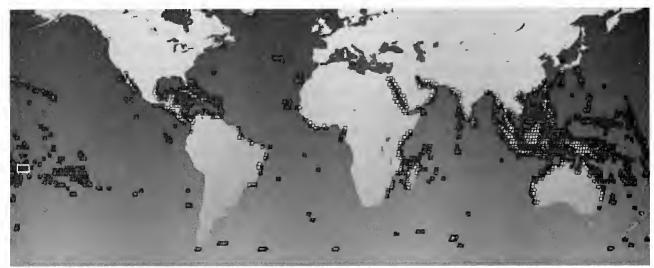
Let me share my experience in Moscow, when I went there as a fellow of the US National Academy of Sciences and a guest scientist of the Soviet Academy of sciences in 1979. This was the time when 'cold war' was at its pinnacle and communism under Soviet leader Leonard Breznev interpreted the Darwinian concept of the 'struggle for existence' as the 'tug of war' between Russians and Americans, as literally a Darwinian process where the victor will be eventually communists. This approach is certainly stretching Darwinism too far or too thin. We must be very cautious in defining the process of natural selection, when it comes to human dimension. Even though evolutionary biologist J.B.S. Haldane, who left Britain to settle in India, leaned toward communism as the Russians hailed him for his views, Charles Darwin died a dedicated British citizen and was buried in Westminster Abbey next to his mentor Geologist Charles Lyell. Darwin was against slavery and was a secular humanist.

At the ASB Darwin symposium our goal is to stay away from controversies such as Intelligent Design (ID) vs Darwinian Evolution or Biblical Creation vs Big Bang to Primates but concentrate on how *Homo sapiens*, as a dominant species, bringing about massive extinction events in as short a period as a century and not as Earth witnessed the previous five extinction cycles, occurring in the intervals of millions of years. Let us, therefore, look at what man has done by excessive carbon dioxide emissions to coral reef ecosystems both in the equatorial tropical seas and in the deep-sea. Darwin was first to describe atoll reefs in evolutionary perspectives.

## DECLINE AND IMMINENT DEMISE OF CORAL REEFS! IS HUMAN CARBON POLLUTION THE CULPRIT?

Overfishing, pollution, diseases, warming induced by the cycle of *El Nino*, climate change, and ocean acidification threaten the coral reef ecosystems (Hughes et al, 2003, Kleypas et al., 1999). Past decades witnessed mass coral bleaching events (Donner et al., 2005). In 2008 I conducted the "Ocean Acidification" workshop with 24 persons (12 scientists and 12 government program managers from NOAA, MMS, NSF, etc.) during the 11<sup>th</sup> International Coral Reef Symposium in Fort Lauderdale, Florida. The results of the workshop clearly showed that in this century the atmospheric carbon dioxide levels will significantly increase at the ongoing rate of emissions and consequently the ocean chemistry will change with drop in pH level. This scenario implies reduction in coral calcification rates and rates of reef accretion. Climate change is expected to pose serious threat to the function-and in essence to the very survival of coral reef ecosystems. Our group recommended the findings to the US National Academy of Sciences and requested to develop monitoring stations in the world oceans to keep track of the pH changes.

Donner and Portere (2007) suggested that coral reefs should be adopted as "iconic" ecosystems in the effort to encourage reduction in the greenhouse gas emissions. Charles Darwin was not aware when he lived that the aesthetically appealing and charismatic coral reefs will be threatened by human activities. We already know that 33 % of the coral species are killed or endangered, even in the well-protected Great Barrier Reef of Australia. Coral reefs of the Florida coast (ASB region) are also in peril.



Dots indicate locations of coral reefs in the tropical regions of the world oceans.

Jacques-Yves Cousteau, co-inventor of aqua-lung and one of the world's foremost pioneer in undersea exploration, wrote the book: "Life and Death in a Coral Sea". In 1960 when he learned that a large amount of radioactive waste was going to be discarded on the floor of the Mediterranean Sea, he opposed it and stopped this dumping. I visited with him in Monaco at the Oceanographical Museum when he was director. I was influenced and inspired by Cousteau.

I spent six years as Research Oceanographer and Adjunct Professor in the graduate department of oceanography at Florida State University (1966-'72) and received a research grant from US Oceanographer of the Navy and another contract from the Office of Naval Research (ONR) to study the effects of low-level radioactive and military waste, disposed in the 'Deep-Sea Dumping Site 106 off New Jersey'. It was sad to see in the 1000s of sea-floor photographs I took the dismal scene of the dumpsite. The decision was made to suspend the dumping of the low-level nuclear waste

Subsequently, I received a grant from NOAA (National Oceanic and Atmospheric Administration) and National Science Foundation (NSF) to study the impact of pharmaceutical waste dumped at 8200 meters on the floor of the Puerto-Rico Trench, north of Arecibo where 'penicillin' was produced by Pfizer Co. My research eventually led to the closure of this pharmaceutical dumpsite. I am thankful to Jacques-Yves Cousteau for his inspiration to save the seas from abusive human exploitation.

Cousteau's legacy includes more than 120 television documentaries, more than 50 books and an environmental foundation with 300,000 members. Cousteau defined the coral reef ecosystem as follows: "It is a strange and alien

world beyond experience of humankind, wild, throbbing with life and an extravagance of color and form". It is the unique undersea world Darwin also discovered and described in evolutionary perspectives. Darwin was proud in his grave to see "Cousteaus of the world" to study and protect these vulnerable ecosystems that are now becoming victims of environmental exploitations. Is there a lesson that the academic scientists can learn from Cousteau? In our universities, we advocate the 3-pronged professional approach for faculty with three avenues: Research, Teaching and Service. The service component is somewhat de-emphasized and possibly science faculty can promote nature conservation in giving public lectures, creating TV programs for children as Cousteau did.



JACQUES-YVES COUSTEAU (1910-1997)

What is the real culprit that threatens coral reefs? It is now increasingly clear that carbon is a pollutant, as Environmental Protection Agency (EPA) recently concluded, Carbon dioxide is possibly the culprit responsible for disrupting the chemical equilibrium of the seas and change in saturation levels seems to interfere with calcification of all shell-bearing sea-animals such as corals and mollusks. Greenhouse gases, coming from human sources, has increased the atmospheric CO2 to alarmingly high levels.

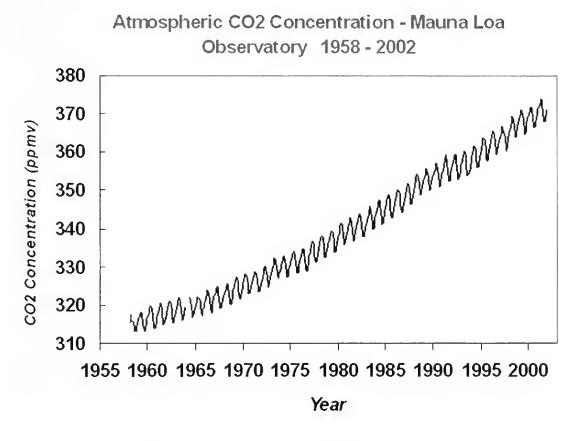
In the Intergovernmental Geophysical Year (IGY) 1957, Oceanographer Roger Revelle started the remarkable series of measurements of atmospheric CO2. It is often said that if Swedish scientist Svante Arhenius (1887) is the grandfather of greenhouse warming, Revelle is the father. Revelle was born at the centenary year of Darwin in 1909 in Seattle. In 1956 Revelle, in collaboration with Charles David Keeling at the Scripps Institution of Oceanography, made the first measurement of atmospheric carbon dioxide at Mauna Loa (Hawaii) and Antarctica as part of the International geophysical year program. In 1957 Roger Revelle and Hans Suess demonstrated in a joint paper in *Tellus* (vol.9:18-27) that carbon dioxide increased in the air as a result of the consumption of fossil fuel.



ROGER REVELLE

In 1972 the centenary celebration of the famous Challenger Expedition (1872-1876) was held in Edinburgh, Scotland. I joined as a Professor at the University of North Carolina at Wilmington and my foreign trip was to Scotland to present a paper at the Challenger centenary. I met in my flight from New York to London Dr. Roger Revelle who was director of the world renowned Scripps Institution of Oceanography at La Jolla. We sat close to each other in the plane and discussed the global warming problem, caused by carbon dioxide emissions. At Edinburgh we both met a long time friend Sir George Deacon who founded the British oceanography Institute. Sir George visited me in Wilmington when I organized the 'First International Antarctic Krill Symposium' in Wilmington, North Carolina in 1982. When I retired from the University in 2001 I founded a Non – profit Organization (GIBS) for nature conservation. I also established Sir George

Deacon Medal in 1998 to recognize scholars who build bridge between two disciplines. Prof. Edward Wilson of Harvard University was awarded the 'Deacon Medal' in 1998 during the 60<sup>th</sup> annual meeting of the ASB in Wilmington, North Carolina. We are indebted to Revelle for establishing the baseline level of atmospheric carbon dioxide as 310 ppmv in Mauna Loa observatory and since then there is a steady increase and the maximum at 390 ppmv was observed in May 2009.



In the fall of 2008 Professor William Schlesinger, Director of the Cary Institute for Ecosystem Studies in Millbrook, New York (formerly Dean of the Nicholas School of Environment at Duke University and 2008 ASB keynote speaker) invited me to his institute to present a seminar on: "Climate change and Ocean Acidification Impact on Coral Reefs in the Tropics and Deep-sea Environment". Let me summarize what I pointed out in my seminar:

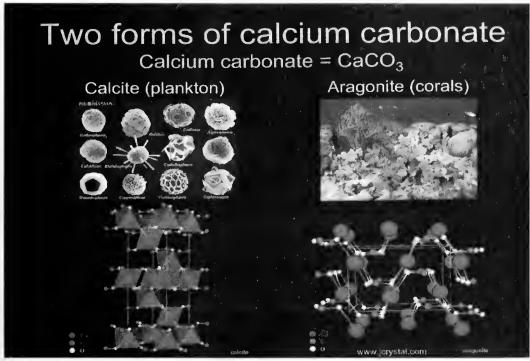
- 1. It is evident that atmospheric carbon dioxide may reach 440 ppmv by 2020, 520 ppmv by 2040 and >800 ppmv by the end of the century in 2100. This scenario presents some fundamental problems to all shell-bearing animals such as oysters, mussels and corals.
- 2. The most spectacular and colorful deep-sea coral ecosystems, that are presently declared as VMEs (Vulnerable Marine Ecosystems) for conservation and management purposes between 400 and 2000 m, both in the continental slope and on seamounts in all oceans, will experience significant drop in ambient pH levels that may interfere with calcification and growth of the hard and soft corals in the deep-sea because of ocean acidification, caused by flux of carbon dioxide into the seas. In 2006 I organized with NOAA an international symposium at the University of Miami

- to summarize the status of our knowledge on these deep-sea coral ecosystems (see George and Cairns, 2007 a & b).
- 3. The threat to the deep-sea corals comes from rapid shoaling of both ASH (Aragonite Saturation Horizons) and CSH (Calcite Saturation Horizons) and therefore limiting the depth range where normal calcification is possible.



Prof. George (left with ASB hat) and Prof. William Schlesinger (with spectacles)

4. There is a fundamental difference between Scleractinian hard corals in which the skeleton is composed of aragonite (one molecular form of calcium) and the octocorals (soft corals like Gorgonians) in which the skeleton is composed of calcite (another molecular form of calcium), as illustrated in the figure below. It is also obvious that the aragonite-corals are far more susceptible to the impact of ocean acidification than the calcite-secreting octocorals.



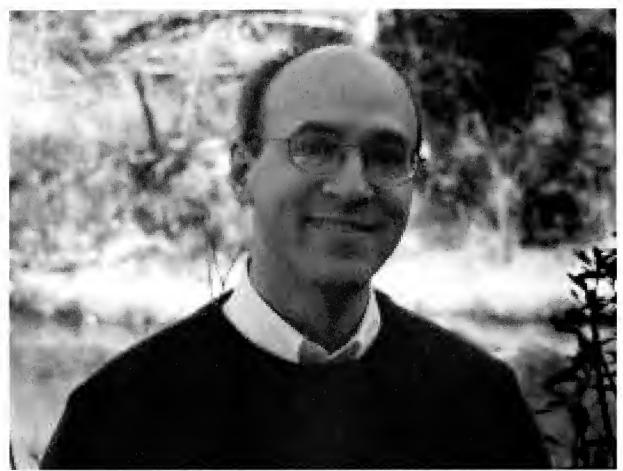
Molecular forms of aragonite and calcite.

5. Based upon experimental studies on the most important scleractinian coral Lophelia pertusa that builds enormous deepwater coral reefs between 80 and 850 m on both sides of the North Atlantic Ocean, George (2008) concluded that the tipping point at which these corals disintegrate is 7.7 pH. Manzello et al (2008) also reported that in the Eastern Tropical Pacific where pH is low at 7.8 and aragonite saturation rate is 3.4 coral are more susceptible to bioerosion. All these preliminary findings tell us that in 2100 when the pH drops significantly by ocean acidification, scleratinian hard coral species including f brain corals will become extinct? This scenario is frightening and we need to do something to stop it by cutting down greenhouse gas emissions within the next 30 to 40 years.

#### CONTRIBUTORS IN THE ASB 2009 DARWIN SYMPOSIUM

1. Dr. James Costa gave a presentation on "Darwin evolving: Historical perspectives on natural selection and biodiversity".

Prof. Costa has done extensive research on the ecology and evolution of social insects, in particular the social Lepidoptera and Symphyta.



Dr. Jim Costa, Director of Highland Biological Station and Katherine B. Robinson Professor of Biology at the University of Western Carolina University in Cullowhee, North Carolina.

2. Dr. Andrew Berry gave a talk on "Gould's rewind rewound: Determinism and Contingency in the History of Life".

Dr. Berry's expertise is how Darwinian processes affect natural populations. He is also known for molecular studies on the fruit flies and has done research in exotic locations such as the Nepal (studying bats), Faroe islands (wrens), Ecuadorian Antilles (butterflies) and the highlands of New Guinea. He has taught history of science in Oxford. His notorious book on "Alfred Russell Wallace, 'Infinite Tropics' (2002) surveys great achievements of an unsung hero in evolutionary biology, a neglected co-discoverer of Natural Selection theory.

3. Dr. Kenneth Sulak, gave a presentation entitled: "Darwin's fishes: Reflections from Daniel Pauly's Encyclopedia of Ichthyology, Ecology and Evolution".

Dr. Sulak was a student at Harvard for his B.S. degree and then received his Master's and Ph.D. from the Rosenstiel School of Marine and Atmospheric Science (RSMAS) at the University of Miami. Dr. Sulak was a National Academy of Science Fellow to Russia. His research focuses on the fish communities in the US East coast and the Gulf of Mexico. Dr. Ken Sulak was an invited scientists at the Deep-Sea Coral conservation conference in 2007 at Harvard University, cochaired by Prof. Robert Y. George (President of GIBS) and Prof. Edward O. Wilson, Harvard University. Dr. Sulak is Research Fish Biologist with the US Geological Survey Office at the University of Florida in Gainesville, Florida.



Dr. Andrew Berry (photo above) was also the keynote speaker at the 2009 ASB annual meeting in Birmingham, Alabama. He is a research scientist at the Museum of Comparative Zoology (MCZ) at the Harvard University.

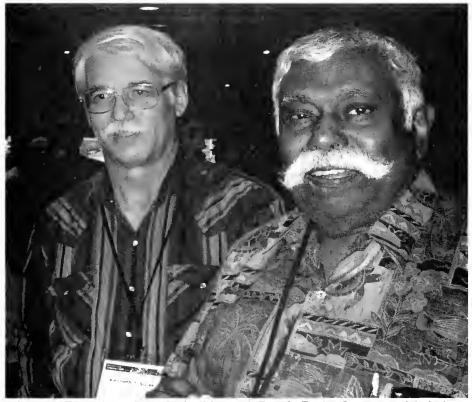


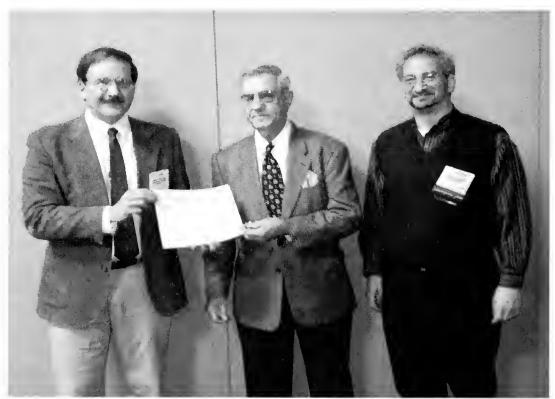
Photo above shows Dr. Ken Sulak (left) and Prof. Bob George (right), while both were at the 4<sup>th</sup> International deep-Sea Coral Symposium in Wellington, New Zealand in December 2008.

4. Prof. Howard Neufeld (former President of ASB) presented a paper entitled: "The Forgotten Component of Global Climate Change: Air Pollution as a Driver of Plant Evolution".

Dr. Neufeld's research focused on the impact of troposphere ozone on plants that are native to Great Smokey Mountains National Park. He has also studied the influence of acid rain on foliages. Dr. Neufeld is Professor of Biology at the Appalachian State University, Boone, North Carolina.

5. Dr. Conley McMullen presented the final talk of the Darwin symposium on April 3, 2009, taking the audience to Galapagos Islands where Darwin made his original discoveries. His paper was on "Changes in the Islands that changed the world: Galapagos Phytogeography and the Invasive species problem".

Dr. McMullen's favorite area of investigation involves the study of the Galapagos Islands angiosperms (flowering plants) and their pollinators (mostly nocturnal pollinators). His emphasis has been on the genus Cordia (Boraginaceae) that is represented in the Galapagos by seven species, four of which are endemic.



Dr. Conley K. Mc Mullen (left extreme) and Dr. Howard Neufeld (right)

#### NATURE CONSERVATION AND MANAGEMENT

Science-based management has received wide recognition ever since nature conservationist and founder of the Sierra Club John Muir has advocated the need for creating National Parks. It is important to accept the fact that there are 3 levels that are involved in nature conservation.

1. Science and Scientists (Government, Academic and NGO Scientists)

- 2. Management and Managers (Program Directors-Universities and Government Agencies such as NOAA, NSF, NIH, NASA, EPA, MMS, ONR etc.)
- 3. Decision-Makers (Congressmen–Senators and Representatives at Federal level and Senators and Representatives at State level and also Secretaries both at Federal and State levels).

Almost a century ago President Theodore Roosevelt laid the foundation for nature conservation. He was dismayed by the pathetic situation of American Forests at the end of the 19<sup>th</sup> century since the forests were poorly managed by game wardens. He wrote to the Forest Commission that "I want as game protectors men of courage, resolution, and hardiwood, who can handle the riffle, ax and the paddle; who can camp out in summer and winter, who can go on snow-shoes, if necessary; who can go through the woods by day and night without regard to trails". Roosevelt emphasized: "The subject of forest preservation is of utmost importance to the State. The Adirondacks and Cataskills should be great parks kept in perpetuity for the benefit and enjoyment of our people". It is not the conservationist John Muir but the manager Gifford Pinchot who played the key role in advising and implementing Theodore's Roosevelt's policies on conservation of natural resources. Pinchot called upon Roosevelt and laid a plan for consolidation of forest work of the federal government in the Bureau of Forestry.

Gifford Pinchot approached Roosevelt to propose to the US Congress a new forest reclamation policy. In 1905 Roosevelt appointed Pinchot as the chief of the newly created United States Forest Service, which was previously called the Bureau of Forestry. The first Forestry School was also founded at Yale University to train foresters. With Roosevelt's initiatives, in 1907 the area of national forests was increased by Presidential proclamation more than 43 million acres. Precisely



a century ago Gifford Pinchot organized the White House conference in 1909 on conservation of natural resources and this conference recommend: "All nations should be invited to join together in a conference on the subject of world resources, their inventory, conservation and wise utilization". A century later in celebrate the 200<sup>th</sup> 2009, as we anniversary of Charles Darwin's birth, recommendation for conservation of the world's resources both in land and seas is important, particularly so with the threat of increasing emissions of greenhouse gases both by the industrialized and developing countries.

#### TRIBUTES TO EDWARD O. WILSON

For the 200<sup>th</sup> birthday celebration of Charles Darwin, the symposium organizers decided to invite Prof. Edward O. Wilson of Harvard University to come to Birmingham, Alabama for the 2009 annual meeting of ASB. Ed Wilson accepted the invitation and came on April 3, 2009 to the city where he was born. We gave him the title of his talk as "Future". He spoke on this topic since the future of the biodiversity of earth is now threatened. He coined the new term "Eremozoic Era" – meaning 'Age of Loneliness' when the Earth will be inhabited primarily by *Homo sapiens* with a low biodiversity in the surrounding environment. In his most recent book "Creation", Wilson appealed to Baptist ministers in the South and elsewhere to join him and other nature conservationists to promote biodiversity protection. Time is ripe now to say: "We respect Charles Darwin's original appeal in his book the "Origin of Species" to protect all the beautiful and wonderful species".



Ed Wilson with Bob Durant, Massachusetts Secretary for Environmental Affairs in 2002 on the 'Biodiversity Promotion' venture, taking a walk in the forest!

### PURPOSE AND ACTION PLAN OF THE 2009 ASB DARWIN BICENTENNIAL SYMPOIUM

### PURPOSE: "TO PROTECT BIODIVERSIY OF THE PLANET EARTH"

Action Plan: We should resolve as a post-Darwin symposium effort to (1) To conduct workshops and conferences to take inventory of species in different geographic regions, using models such as the Census of Marine Life (CML), (2) To describe the undescribed species of plants and animals, with more training of taxonomists in Museums and Academia, (3) To keep the link strong between scientists, managers and decision makers for biodiversity protection and (4) In accordance with Prof. Edward O. Wilson's earnest appeal to Southern Baptists in his book 'CREATION', GIBS will conduct conferences and projects with theologians and philosophers, not only with Southern Baptists but all denominations, to promote biodiversity protection and "Creation Care".

"Since Darwin gave us the glimpse of 'Origin of Species', this knowledge should have given us a sense of wonder over the magnitude and duration of biotic enterprise. Man is hardly the sole object of this quest. His assumption arose from his whistling in the dark". (Aldo Leopold, Father of the 'Concept of Ecological Conscience'.)



ONE PICTURE IS WORTH A THOUSAND WORDS.

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From left to right: Howard Neufeld, James Costa, Edward Wilson, and Conley McMullen pose after the Darwin Bicentennial Symposium.



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- Chair: Terry Richardson, Department of Biology, Box 5048, University of North Alabama, Florence, AL 35632; 256-765-4429; Cell 256-443-9165; FAX 256-765-4430; tdrichardson@una.edu
- Patricia Cox, TVA Heritage Program, 400 West Summit Hill Drive WT11C, Knoxville, TN 37902; 865-632-3609; FAX 865-632-4223; pbcox@tva.gov
- **Scott Jewell**, A2ZConvention Services, PO Box 1088, Mebane, NC 27302; 336-421-0034; Cell 336-213-7373; Toll Free FAX 866-213-2095; a2zconvention @yahoo.com
- **David Whetstone**, Biology Department, Jacksonville State University, 700 Pelham Road, Jacksonville, AL 36265; 256-782-5215; FAX 256-782-5587; whetstone@cableone.net

### Meritorious Teaching Award Committee – Award Sponsored by ASB Patron Member Carolina Biological Supply Company

- Chair: Safaa Al-Hamdani, Biology Department, Jacksonville State University, 700 Pelham Road North, Jacksonville, AL 36265-1602; 256-782-5642; FAX 256-782-5587; sah@jsu.edu
- **Dwayne Wise**, Department of Biological Sciences, PO Drawer GY, Mississippi State University, Mississippi State, MS 39762; 662-325-7579; FAX 662-325-7939; daw1@ra.msstate.edu
- **Michael J. Baranski**, Dept. of Biology, Catawba College, Salisbury, NC 28144-2488; 704-637-4442; mbaransk@catawba.edu

### **Nominating Committee**

- Chair: Thomas R. Wentworth, Department of Plant Biology, Box 7612, North Carolina State University, Raleigh, NC 27695-7612; 919-515-2168; tom wentworth@ncsu.edu
- **Elaine Davis**, Department of Natural Sciences, Bowie State University, 14000 Jericho Park Road, Bowie, MD 20715; 301-860-3876; edavis@bowiestate.edu
- **Douglas A. Rayner**, Department of Biology, Wofford College, Spartanburg, SC 29303; 864-597-4624; raynerda@wofford.edu

### Past-President's Council

Chair: Thomas R. Wentworth, Department of Plant Biology, Box 7612, North Carolina State University, Raleigh, NC 27695-7612; 919-515-2168; tom wentworth@ncsu.edu

### **Patron Member and Exhibitor Committee**

- Chair: Randall L. Small, Department of Ecology and Evolutionary Biology, University of Tennessee, Knoxville, TN 37996; 865-974-3065; FAX 865-974-3067; rsmall@utk.edu
- Past Chair of Local Arrangements Committee: George R. Cline, Biology Dept., Jacksonville State University, 700 Pelham Road, Jacksonville, AL 36265-1602; 256-782-5798; gcline@jsu.edu
- Vice-President: A. Floyd Scott, Dept. of Biology and Center for Field Biology, Austin Peay State University, P.O. Box 4718, Clarksville, TN 37044; 931-221-7781; FAX 931-221-6372; scotta@apsu.edu
- Meetings Coordinator: Scott Jewell, A2ZConvention Services, P.O. Box 1088, Mebane, NC 27302; 336-421-0034; Cell 336-213-7373; Toll Free Fax 866-213-2095; a2zconvention@yahoo.com

### **Place of Meeting Committee**

- Chair: John Herr, Dept. of Biology, University of South Carolina, Columbia, SC 29208; 803-777-8110; FAX 803-777-4002; herr@biol.sc.edu
- **Terry Richardson**, Department of Biology, Box 5048, University of North Alabama, Florence, AL 35632; 256-765-4429; Cell 256-443-9165; FAX 256-765-4430; tdrichardson@una.edu
- **Kenneth Marion**, Department of Biology, University of Alabama, Birmingham, AL 35294-1170; 205-934-8309; jkmarion@uab.edu
- Ex-Officio Meetings Coordinator: Scott Jewell, A2ZConvention Services, PO Box 1088, Mebane, NC 27302; 336-421-0034; Cell 336-213-7373; Toll Free FAX 866-213-2095; a2zconvention@yahoo.com

### Poster Awards Committee – Award sponsored by ASB Patron Member Brooks/Cole Cengage Learning

- Chair: Lathiena Manning, 11712 S Laurel Drive, Apt. 2A, Laurel, MD 20708; Cell 302-740-0531; Imanningbiology@hotmail.com
- Roland Roberts, Biological Sciences, Towson University, 8000 York Road, 341 Smith Hall, Towson, MD 21252-0001; 410-704-3034; rroberts@towson.edu
- **John Delfino**, Midway College, 512 E Stephens Street, Midway, KY 40347-1120; 859-846-5813; jdelfino@midway.edu
- **Megan Gibbons**, Department of Biology, Birmingham Southern College, Birmingham, AL 35254-9022; 205-226-7817; mgibbons@bsc.edu

### **Publications Committee**

- Co-Chair: Ronald V. Dimock, Department of Biology, Wake Forest University, Winston-Salem, NC 27106; 336-758-5567, dimock@wfu.edu
- Co-Chair: Randall L. Small, Dept. of Ecology and Evolutionary Biology, University of Tennessee, Knoxville, TN 37996-1610; 865-974-2371; rsmall@utk.edu
- Member-at-Large of the Executive Committee: Joey Shaw, Department of Biological and Environmental Sciences, University of Tennessee-Chattanooga, Chattanooga, TN 37403-2598; 423-443-9568; joeyshaw@utc.edu

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**Ex-Officio - Print Editor: Jim Caponetti**, Division of Biology, M303 Walters Life Sciences Building, University of Tennessee, Knoxville, TN 37996-0830; 865-974-6841; FAX 865-974-4057; jcaponet@utk.edu

**Ex-Officio - Web Editor: Dennis Haney**, Department of Biology, Furman University, 3300 Poinsett Highway, Greenville, SC 29613; 864-294-2050; FAX 864-294-2058; dennis.haney@furman.edu

### Research Awards Committee - Senior — Award Sponsored by ASB Patron Member Marilyn Pendley

- Chair: George Cline, Biology Department, Jacksonville State University, 700 Pelham Road, Jacksonville, AL 36265; 256-782-5798; FAX 256-782-5587; gcline@jsu.edu
- Ross Hinkle, Department of Biology, University of Central Florida, PO Box 162368, Orlando, FL 32816-2368; 407-823-2141; FAX 407-823-0715; rhinkle@mail.ucf.edu
- **Gaven Lawson**, Department of Biology, Bridgewater College, Bridgewater, VA 22812; 540-828-8000; glawson@bridgewater.edu

### Research Awards Committee - Student - Award Sponsored by ASB Patron Members Martin Microscope Company and Brooks/Cole Cengage Learning

- Chair: Ricky Fiorillo, Department of Biology, University of Louisiana at Monroe, Monroe, LA 71209; 318-342-1797; FAX 318-342-3312; fiorillo@ulm.edu
- **William Ensign**, Department of Biology and Physics, Kennesaw State University, Kennesaw, GA 30144; 770-499-3505; FAX 770-423-6625; bensign@kennesaw.edu
- **Andrew Methven**, Department of Biology, Eastern Illinois University, Charleston, IL 61920-3009; 217-581-6241; asmethven@eiu.edu

### Research Awards Committee - Microbiology - Award Sponsored by ASB

- Chair: Donald Roush, Department of Biology, University of North Alabama, PO Box 5181, Florence, AL 35632; 256-765-4435; FAX 256-765-4430; dhroush@una.edu
- **Judy Awong-Taylor**, Office of P-16 Initiatives, Board of Regents of the University System of Georgia, 270 Washington Street, SW, Atlanta, GA 30334; 404-651-5342; FAX 404-463-1760; judy.awong-taylor@usg.edu
- Chris Murdock, Department of Biology, Jacksonville State University, Jacksonville, AL 36265-1602; 256-782-8440; murdock@jsu.edu

### **Resolutions Committee**

- Chair: Thomas R. Wentworth, Department of Plant Biology, Box 7612, North Carolina State University, Raleigh, NC 27695-7612; 919-515-2168; tom wentworth@ncsu.edu
- Cathryn (Katie) H. Greenberg, USDA Forest Service, 1577 Brevard Road, Asheville, NC 28806; 828-667-5261, ext 118; kgreenberg@fs.fed.us
- **Dean Cocking**, Dept. of Biology, James Madison University, Harrisonburg, VA, 22807; 540-568-6566; cockinwd@jmu.edu

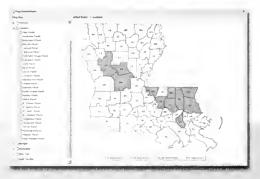
### Silver

A biodiversity informatics software development company that specialized in online products and custom solutions for biological and natural history collections.

- \* Interactive Web Applications
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### Web Portal Software for Biological & Natural History Collections

Search Specimen DB								
Filters		Catalog #	Family 4	Genus	Species	State	Parish/County	Locality
Family: Asteraceae	×	∃ Family: Asteraceae	(100 Specimens)					
Genus:		17429	Asteraceae .	Achillea	miletolium	Louisiana	Assumption Parish	Paincourtville
Species:		17430			um	Louisiana	Bienville Parish	unspecified
		17431	View Details		um	Louisiana	East Baton Rouge Paris	Baton Rouge
State:	~	17432	ITIS: Catalog of	Life	um	Louisiana	East Baton Rouge Paris	Plains
Parish/County		17433	International Pla	ant Names Ir	ndex Jm	Louisiana	East Feliciana Parish	Clinton
Locality:		17434	GBIF		Jim	Louisiana	Lincoln Parish	unspecified
Collector:		17435			um	Louisiana	Morehouse Parish	Bonita
		17436	Flora of North A	merica	Jim	Louisiana	St Halena Parish	Greensburg
Catalog #:		17437	NatureServe		im	Louisiana	St. Helena Parish	Greensburg
		17438	Tropicos		,am	Louisiana	St Helena Parish	Greensburg
		17439	Google Images		,im	Louisiana	Vernon Parish	Leesville
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		27784 :	PicSearch		itoli	a Louisiana	St Martin Parish	Cypress Island Preser
		13268	rintable Formal	t	a	Louisiana	Ascension Parish	Brittany
		13269	Asteraceae	Ageratina	altissima	Louisiana	Ascension Parish	New River

SilverCollection is an interactive web portal for herbaria and other biological collections. It is a client-specific customized application for online access to specimen data. This application provides an interactive solution for curating, searching, and browsing your collection records. More info at: collection.SilverBiology.com

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### 2010 MEETING OF THE ASSOCIATION OF SOUTHEASTERN BIOLOGISTS



Crowne Plaza Hotel Asheville, North Carolina APRIL 7-10, 2010

### **CALL FOR PAPERS AND POSTERS**

(this is the only call)

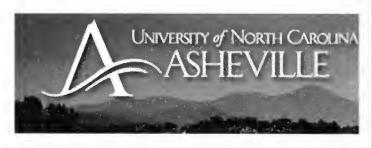
### THE 71<sup>st</sup> ANNUAL ASB MEETING HOSTED BY:



Cullowhee, North Carolina



and





### Please note the following deadlines for our 71<sup>st</sup> annual meeting.

### This will be the only call for papers and posters!

16 OCTOBER 2009 Nominations for ASB officers and executive

committee due to the Nominations Committee.

1 NOVEMBER 2009 Electronic submission of Abstracts open

4 JANUARY 2010 Titles and abstracts of papers and posters,

including those applying for awards, due to the Program Committee. This will be the *only* call for papers and posters. They must reach the

Program Committee by this date.

16 JANUARY—30 JANUARY 2010

Submission materials for research awards due to

respective research awards committees.

30 JANUARY 2010 Meritorious Teaching Award materials due to

Meritorious Teaching Award Committee. Application for graduate student travel awards due to Graduate Student Travel Awards

Committee.

### **Special note from the Treasurer**

If YOU are submitting an abstract, you know now that you plan to attend the meeting, so PLEASE make sure your membership is up-to-date, then go ahead and register for the meeting as soon as possible. Please do not delay until the last minute when we will have a logjam of people trying to pay membership and register before the deadline!!

### LOCAL COMMITTEE ASSIGNMENTS

### FOR THE 71st ANNUAL MEETING

### WESTERN CAROLINA UNIVERSITY, CULLOWHEE, NC AND UNIVERSITY OF NORTH CAROLINA - ASHEVILLE, ASHEVILLE, NC

Local Arrangements Co-Chairs:	Beverly Collins collinsb@email.wcu.edu	(828) 227-3663
	Jonathan Horton jhorton@unca.edu	(828) 232-5152
Program Committee:	Laura DeWald ldewald@wcu.edu	(828) 227-2478
	Jennifer Rhode jrhode@unca.edu	(828) 251-6232
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	Chris Nicolay cnicolay@unca.edu	(828) 232-5149
Social Events:	Sean O'Connell soconnell@email.wcu.edu	(828) 227-2203
	Jonathan Horton jhorton@unca.edu	(828) 232-5152
Volunteer Coordinators:	Anjana Sharma asharma@email.wcu.edu	(828) 227-7244
	Jennifer Rhode jrhode@unca.edu	(828) 251-6232
Audiovisual Coordinators:	Greg Adkison gadkison@email.wcu.edu	(828) 227-3655
	Tim Forrest tforrest@unca.edu	(828) 232-5150
Silent Auction:	Sean O'Connell soconnell@email.wcu.edu	(828) 227-2203
Meetings Coordinator:	Scott Jewell a2zconventionyahoocom	(336) 421-0034

The Meetings Coordinator handles Commercial Exhibits & Workshops, Registration, Hotel Accommodations, and Transportation.

### PAPER & POSTER SUBMISSION DOCUMENTS

### FOR THE 2010 MEETING

**DEADLINE: MONDAY, 4 JANUARY 2010** 

Individuals presenting papers or posters are expected to be members of ASB or an affiliate society!

### INSTRUCTIONS FOR SUBMITTING ABSTRACTS

You must submit your abstracts online through the ASB website:

http://www.asb.appstate.edu, or directly at http://paws.wcu.edu/gadkison/asb2010/.

First, create a maximum 250-word abstract in MS Word or compatible software. Please save it as yourlastname\_yourfirstname\_idnumber.doc. The idnumber will be given to you when you click on the abstract upload page. Please use Arial font, 11 point type, and follow the format of this example:

**BEVERLY COLLINS<sup>1</sup> AND GARY WEIN<sup>2</sup>.** Western Carolina University<sup>1</sup> Highlands-Cashiers Land Trust<sup>2</sup>. This is the title of the abstract with *Scientific names* italicized. The rest of the abstract goes here.

On the electronic submission form, you will be prompted to provide the following information items:

AUTHOR(S)
PRESENTING AUTHOR
PRESENTING AUTHOR INSTITUTION
PRESENTING AUTHOR PHONE
PRESENTING AUTHOR E-MAIL
ABSTRACT TITLE

PRESENTATION TYPE: ORAL or POSTER

CHOOSE TWO TO THREE SECTIONS TO WHICH YOUR TALK OR POSTER SHOULD BE ASSIGNED.

Ornithology Parasitology Aquatic Biology General Zoology Behavior Physiology Plant Biology Cell & Molecular Biology Genetics **Systematics** Conservation Biology Herpetology Ichthyology **Teaching Biology Developmental Biology** Invertebrate Zoology Toxicology **Ecology** Wetlands Entomology Mammalogy **Evolutionary Biology** Microbiology

AWARDS: If you intend to apply for one of the following awards, you **must indicate this to the Program Committee during the abstract submission** so that talks can be scheduled appropriately. Students must be first author to be considered for student awards. Applicants must be present at the Awards Banquet to be considered for an ASB award.

For most awards, you **MUST** also submit an abstract to the award committee chairperson. Please see applicable rules for each award at www.asb.appstate.edu/2010\_Meeting\_Awards.php and in this issue. If you do not follow these instructions, you will not be considered for the award.

ASB Senior Research Award (\$1,000). Sponsored by ASB Patron Member Marilyn Pendley.

ASB Student Research Award (\$1,000). Sponsored by ASB Patron Member Martin Microscope Company.

Brooks/Cole Cengage Learning Student Research Award in Aquatic Biology (\$200). Sponsored by Brooks/Cole Publishing Company of Cengage Learning.

ASB Research Award in Microbiology (\$500). Sponsored by ASB.

ASB Student Poster Award (\$300). Sponsored by ASB Patron Member Brooks/Cole Cengage Learning.

Eugene P. Odum Award (\$500). Sponsored by the SE Chapter of ESA.

Elsie Quarterman-Catherine Keever Award (\$300). Sponsored by the SE Chapter of ESA.

NC Botanical Garden Award (\$200). Sponsored by the NCBG.

SEASIH Student Travel Awards (\$50). Sponsored by the SE Chapter of ASIH. See http://www.asih.org.

SEASIH Student Ichthyology Award (\$100). Sponsored by the SE Chapter of ASIH. See http://www.asih.org.

SEASIH Student Herpetology Award (\$100). Sponsored by the SE Chapter of ASIH. See http://www.asih.org.

SAC/SWS Student Travel Awards (\$100). Sponsored by the SA Chapter of SWS. BSA Student Plant Science Paper Award (\$300) and Poster Award (\$300) plus travel expenses. Sponsored by the SE Section of BSA.

### INSTRUCTIONS FOR SUBMITTING ORAL PRESENTATIONS AND PREPARING POSTERS

Complete and final Powerpoint (2003 preferred) presentations must be submitted ONLINE (http://www.asb.appstate.edu/) to the audiovisual coordinator to be received by April 2, 2010. On-line submission will begin February 1. Presenters should bring a backup copy on a USB memory drive. Poster space is 46" x 46". Bring your own pins or Velcro.

For questions contact Dr. Greg Adkison, Department of Biology, Western Carolina University, email: gadkison@email.wcu.edu, 828-227-3655 or Dr. Beverly Collins, Department of Biology, Western Carolina University, email: collinsb@email.wcu.edu, 828-227-3663

### **ASB 2010 FIELD TRIPS**

Asheville, North Carolina, is cradled in a lush green bowl anchored by 5,721-foot Mount Pisgah and surrounded on all sides by the Appalachian Mountains. In 2010, Wednesday afternoon, April 7, and Saturday, April 10, field trips will highlight the "Appalachian Spring." Trips are from several hours to a half-day in length and will involve caravans. All trips will begin from the check-in area at the conference site in Asheville at the start time listed. Trip end times are the times you could expect to be back in Asheville. One-way participation (without a return to Asheville) is OK. Meals and snacks will be on your own; bring whatever food and water you will need.

The list below is subject to change. More information will be available in later issues of Southeastern Biology. In addition, field trip updates and contact information can be found at the 2010 meeting link (http://www.asb.appstate.edu/meeting.php) on the ASB website or directly at http://paws.wcu.edu/gadkison/asb2010/.

- 1. **Botanical Diversity Field Trip,** The Botanical Gardens at Asheville. Wednesday, time TBA. Trip Leader: Jay Krancheck. Strolling through this collection of plants native to the Southern Appalachian mountains, you will learn about this area's natural history, floras, and community delineation, and visit examples of some unique natural communities including a rock outcrop and bog.
- 2. Cataloochee Valley Elk Viewing, Great Smoky Mountains National Park, NC. Wednesday, 4:00-8:00 pm. Trip Leader: Joe Yarkovich, NPS. Elk once roamed the southern Appalachian Mountains until they were eliminated from the region by over-hunting and loss of habitat. The experimental release of elk into Great Smoky Mountains National Park began in 2001. During this trip, you will hear a presentation on the elk reintroduction, as well as black bear management, and wild hog control in the park. Binoculars for elk viewing recommended. Maximum of 20 participants.
- 3. Ecology and Management of Southern Appalachian Hardwood Forest: A Research Perspective, Bent Creek Experimental Forest, Asheville, NC. Wednesday, 1:00-5:00 pm. Trip leaders: Cathryn Greenberg, Henry McNab, Tara Keyser, David Loftis. Participants will get an overview of the ecology of southern Appalachian hardwood forest ecosystems and learn about the research program in ecology and silviculture at the Bent Creek Experimental Forest. The group will learn how forest composition changes over moisture and fertility gradients. They will also view a demonstration of different forest management practices and learn how each affects forest regeneration, wildlife, and forest food resources such as fleshy fruit and hard mast.
- 4. **Birding at Beaverlake Bird Sanctuary**, Asheville, NC. Saturday, 7:30 am-11:30 am. Trip Leader: Marilyn Westphal, Kitty Reynolds, UNCA. Owned and operated by the Elisha Mitchell Audubon Society, Beaverlake was scheduled to be a strip mall until the local Audubon chapter and nearby homeowners

bought the property and turned it into a bird sanctuary. We will look for early spring migrants, including the white-throated sparrow and yellow-throated warbler. Easy, level walking. Comfortable shoes and binoculars are strongly recommended. Maximum of 20 participants.

- 5. Management and Science in Great Smoky Mountains National Park, NC. Saturday, 8:30 am-2:30 pm. Trip leaders: Paul Super & Joseph Yarkovich, NPS. Starting at Cataloochee Valley and heading to Purchase Knob, this trip will include searching for some of the 31 species of salamander found in the Smokies and discussions of research in the Smokies and wildlife management practices in the park. Comfortable walking shoes and binoculars recommended. Maximum of 20 participants.
- 6. Early Spring Herping at Sandy Bottom Wetlands, Asheville, NC. Saturday, 8:00 am-12:00 pm. Trip leader: Jim Petranka, UNCA. Sandy Bottom is a small floodplain wetlands complex that supports an exceptionally high diversity of amphibians. We will search the site for herps that include the four-toed salamander, mud salamander, mole salamander, and bog turtle. We will also search aquatic habitats for amphibian eggs and larvae. Maximum of 20 participants.
- 7. Pteridophytes and Bryophytes of Panthertown Valley, Jackson Co., NC. Saturday, 8:00 am-3:00 pm. Trip Leaders: Paul Davison, UNA, Duke Rankin, USFS. This 6,295-acre tract within the Nantahala National Forest is distinguished by its broad flat valley floor flanked by granite cliffs abruptly rising 200 to 300 feet. These granite domes with exposed rock are uncommon in the southern Appalachians and offer spectacular open vistas. The area is home to many rare species and natural communities. This trip will include a hike to Schoolhouse Falls to see relictual rockhouse fern gametophytes and rare and fascinating mosses and liverworts, with other stops at Little Green Mountain rock outcrop and Warden Falls. Moderate hiking. Van transportation limited to 15 participants.
- 8. Balsam Crest, Blue Ridge Parkway, Asheville south to Balsam Gap. Saturday, 8:30 am-2:30 pm. Trip leader: Dan Pittillo. This driving/hiking tour will take us along the Blue Ridge Parkway as it crosses the crest of the Balsams between Asheville at NC 191 and Balsam Gap. Flatlanders will appreciate the montane climate and elevation impacts on weather (be sure to dress for cold temperatures). We will stop to view plant communities and breathtaking vistas, hiking at Flat Laurel Gap Paleoecological site, Black Balsam Knob grass & heath bald (discussing burn history), and Red Bank Cove, a rich cove forest where early spring ephemerals may be spotted. Maximum of 15 participants.
- 9. Don't Fall off the Outcrop! Jackson & Macon counties. Saturday, 8:00 am-2:30 pm. Trip leader: Gary Wein. We will visit several high-elevation rock outcrops such as Cedar Cliffs, Laurel Knob, Satulah Mountain, and Little Scaly Mountain. Plant communities include acidic and mafic rock outcrops, heath balds, and a 390 year old dwarf montane white oak forest. Come

prepared for stunning views and a discussion of the state of conservation in western North Carolina!

10. *Kituhwa & Cowee Historical Cherokee Mound and Town Sites*, *Bryson City & Franklin, NC.* Saturday, 8:30 am-3:30 pm. Trip Leaders: Jane Eastman, David Cozzo, Tom Belt, WCU. We will visit two sites that are very significant places in Cherokee culture and history: Kituhwa, the Mother Town, and Cowee, a large and important eighteenth-century economic and diplomatic center. Tour leaders will provide perspectives on the cultural, archaeological, and ethnobiological aspects of these two former Cherokee town sites. Van transportation limited to 15 people.

### ADDITIONAL ACTIVITIES

Attendees and family members will find many interesting places to visit in the Asheville area. Please visit the ASB web site for additional information: www.asb.appstate.edu. Downtown Asheville offers eclectic shopping at Grove Arcade, numerous galleries, and local institutions like Mast General Store; restaurants and cafes that feature local produce; live music; beer from local breweries, and attractions such as Pack Place Education, Arts and Science Center and Thomas Wolfe Memorial State Historic Site. Nearby historic sites include Biltmore Estate and the Carl Sandburg Home National Historic Site. You might visit Black Mountain Center for the Arts or travel along the Blue Ridge Parkway to the Folk Art Center at Milepost 382. Chimney Rock State Park, Grandfather Mountain, North Carolina Arboretum, and the Cradle of Forestry also offer outdoor fun. Families can take a ride on the Great Smoky Mountains Railroad, try whitewater rafting, or go trekking with a llama. Look for the Local Activities table at the meeting or visit the 2010 meeting link (on the ASB website http://www.asb.appstate.edu for more ideas. Register for these two ASB events on the Registration Form.

French Broad River Canoe Trip, Asheville, NC. Saturday, 8:00 am-12:00 pm. Outfitted by the Asheville Outdoor Center (http://www.paddlewithus.com). Cost: \$22.00-30.00. This self-guided, 3-hour, 7-mile river trip is an excellent beginner trip suitable for families and children. Carving its way through the Biltmore Estate Property, with great views of the house and some of the oldest mountains on earth, this quiet, scenic float trip features small waves and easy current and has all the variety for a fun filled day on the river. The river otter, soft-shell turtle, pileated wood pecker, Carolina wren and great blue heron are all likely to be seen when floating this relaxing trip on the French Broad River.

French Broad Whitewater Rafting, Madison Co., NC. Saturday, time TBA. Guided by French Broad Rafting Expeditions (http://www.frenchbroad rafting.com/). Cost: \$36.90-42.30. Experience the exciting adventure of whitewater rapids and enjoy the natural beauty of the Pisgah National Forest as an experienced river guide takes you down the French Broad River on a memorable rafting journey. This trip is a 5-mile, 2-3 hour trip containing class I-III rapids. No rafting experience necessary; children must be 8 or older.

### Announcing the ASB Thursday Night Social "Appalachian Fling"

Some say that a meeting is judged by the success of the Thursday Night Social. We hope to maintain a longstanding tradition of music, dancing, and entertainment that will give you a break from the work of the meeting.

The Social will be located in the center of downtown Asheville, and offers a spacious floor plan of 13,000 + sq feet, with three unique sections for dancing or conversation without the loud band. Three levels full of fun! These include: Street, Mezzanine and the Second floor with a beautiful balcony area overlooking the mountains of Asheville.

Having the characteristic French cottage setting of exposed brick walls, barn ceilings, and vintage tile floors, this spectacular location offers a warm and relaxed atmosphere with a touch of uniqueness and elegance that will make your Thursday Night Social an exceptional experience for everyone. Its unique layout will offer a large dance floor and spacious dining areas with access to some of the finest specialty beers and microbrews in the country. Want to have some conversation without the loud noise of the band? This unique venue is the place for you! Dance the night away or sit back and relax...it's up to you!

The live band this year offers an exciting change from our previous bands. Live on stage is the Firecracker Jazz Band. FJB is ranked as one of the top regional bands. "Explosively Hot" and highly recommended, the FJB jubilant vigor that spills from the stage to the streets. The FIRECRACKER JAZZ BAND revitalizes the energy of the roots of Jazz. In paying homage to the pioneers of early 20<sup>th</sup> Century Jazz, including that of Dixieland and New Orleans, the Firecracker Jazz Band carries the torch that once was lit by such greats as Jelly Roll Morton, Louis Armstrong & Bix Beiderbeck.

Interactive, high energy and fun for everyone! You will not want to miss this!

Signature

Title

Silent Auction
Yes I would like to contribute to the Silent Auction to help with student travel to the Annual Meeting.  (100% of all proceeds to benefit student travel awards)
Partial List of Items Donated at the 2009 Annual Meeting in Birmingham
Dissection Set Corporate Gift Certificates Anatomical Model Dinner for Two Two Nights Hotel Accommodations Books Charts Gift Basket Educational Charts Microscope Golf Putting Machine
Description of Item(s) to be donated
Please check appropriate option: Please contact me at the conference to pick-up donation I will mail the donation to Scott Jewell, ASB Meeting Coordinator before March 15, 2010.

Return form by **March 15**, **2010** to: Scott Jewell, ASB Meeting Coordinator, PO Box 1088, Mebane, NC 27302; A2Zconvention@yahoo.com, 336/213-7373 cell, 336/421-0034 office, 336/421-3425 fax.

Date

phone

e-mail

### Workshop Form

2010 Association of Southeastern Biologists April 7-10, 2010, Asheville, North Carolina

<u>Workshop Description</u>: All commercial workshops will be conducted during the meeting on a first-come first-served basis. Classroom style seating will be provided at no additional charge to the presenter. Each classroom will be set for a minimum of 50 participants. A screen will be provided for each room. **LCD projectors and laptops will not be provided. One workshop per application please.** 

Company/Organization
Please list company name as you wish it to appear on printed materials)
PresenterEmail
Address:
Contact Address:
Telephone:Fax:
Veb site:
Vorkshop Title:
60-Word Workshop Description:
(Description will appear in Final Program of Southeastern Biology)
Please indicate which time slot you prefer below:
Pre-Conference Workshop: Wed., 4pm-5:30pm
Thurs., 8:30am-10am Thurs., 10:30am-12noon Thurs., 1:30pm-3pm Thurs., 3:30pm-5pm Fri., 8:30am-10am
Deadline for workshop submission is 15 October 2009
Hold Harmless Clause The workshop presenter assumes all responsibility and liability for losses, damages and claim arising out of injury to the presenter's display, equipment and other property brought upon the premises of the convention facilities and shall indemnify and hold harmless the association agent servants and employees as well as the ASB organization from any losses, damages and claims.
Upon acceptance by ASB, this signed application and Workshop Contract form becomes the contract form becomes the contract the 2010 ASB Annual Convention. Workshop presenter will be notified of their acceptance better no later than 15 Dec 2009.
Signature Date

Return form by **October 15, 2009** to: Scott Jewell, ASB Meeting Coordinator, PO Box 1088, Mebane, NC 27302; A2Zconvention@yahoo.com, 336/213-7373 cell, 336/421-0034 office, 336/421-3425 fax.

### **Industry Partners Form**

2010 Association of Southeastern Biologists April 7-10, 2010, Asheville, North Carolina

Yes I Would Like To Partner With ASB And Participate
In the Industry Partners Program!!
Send no money now, please complete form and return to address shown below

Company/Orga	anization				
	(Please list company name as you wish it to				
Address:					
City,State,Zip:					
Telephone:	Fax:				
	gnition at the Thursday Night Social, Friday Nigh ion Center and a listing in Final Program of <i>Sou</i>				
Qty	Item	Amount			
	Wed. Night Cash Bar (4 Opportunities)	\$500/opportunity			
	Coffee Breaks (8 Opportunities)	\$500/opportunity			
	Cyber Café & Marketing Survey	\$750/opportunity			
	Thurs. Night Social (4 Opportunities)	\$900/opportunity			
	Friday Night Banquet Cash Bar	\$850			
	Yes, I wish to present a workshop	See Workshop Form			
	24-Hour Exhibit Hall Security	\$1,000			
	ASB Executive Committee Breakfast	\$350			
	Yes, I would like to Donate an Item to the	See Silent Auction Form			
	Silent Auction to help with Student Travel				
	ASB Web Site Hot Link to				
	Your Company (12 months)	\$375			
	Yes, I would like an AD in all 4	See Advertising Form			
	2010 issues of Southeastern Biology (circle	choice)			
	1/4 page=\$200, 1/2 page=\$325, full page=\$425				
	AD in Final On-Site Program (circle choice)	See Advertising Form			
	1/4 page=\$175, 1/2 page=\$225, full page=\$27	5			
Signature		Date			
Title		e-mail			

Return Form with Check or Credit Card Information by **January 1, 2010** to: Scott Jewell, ASB Meeting Coordinator, PO Box 1088, Mebane, NC 27302; A2Zconvention@yahoo.com, 336/213-7373 cell, 336/421-0034 office, 336/421-3425 fax.

### Advertise With The Association of Southeastern Biologists

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Advertise in Southeastern Biology and reach over 1,500 members from 40 states and 9 countries. ASB publishes four issues of *Southeastern Biology* per year and an on-site Program for the Annual Meeting. Choose either or both of these opportunities to increase your marketing exposure. Promote your products and services throughout the year!

### Ad Sizes

1/4 Page Ad 11/2" x 1"

1/2 Page Ad 3" x 2"

Full Page Ad 7½" x 4 ¾"



### **ADVERTISING ORDER FORM**

	Ad in all 4 issues of So	outheastern Biol	logy (circle choice	;)
	1/4 page = \$200, 1/2 pag	ge = \$325, full p	page = \$425	
	Ad in Final On-Site Pro	ogram (circle ch	oice)	
	¼ page = \$175, ½ pag	ge = \$225, full p	age = \$275	
	*All ads are black a	and white and m	nust be submitted	in jpg.
Signature	<del></del> e		Date	
Title		phone	e-mail	
Visa	MasterCard	Disc	cover	
Credit Ca	s It Appears On Card ard Billing Address ne			
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0	office Use Only			
P	aid with check #	_ on Date	Rec'd by:	
by	aid with credit card # y onfirmation Sent on Date:			_ Rec'd

Return form with check or credit card information to: Scott Jewell, ASB Meeting Coordinator, PO Box 1088, Mebane, NC 27302; A2Zconvention@yahoo.com, 336/213-7373 cell, 336/421-0034 office, 336/421-3425 fax.  $\@modern$ 



- Biotechnology
- Image Analysis
- Environmental Science
- Environmental Health Science
- GIS and GPS
- Neuroscience
- Ocean Science
- Volumetric Image Analysis



### SPECIAL REMINDERS FROM THE PRINT EDITOR

### ASB BANQUET ATTENDANCE

Please keep in mind that recipients of ASB awards must be present at the annual ASB banquet to receive the award. Therefore, all applicants for ASB awards must attend the banquet to insure the presence of the winners.

### MEMBERSHIP UPDATE

Please make sure your membership status is up-to-date amply before the deadline for abstract submission and for annual meeting registration. Please be aware that mailing a check or money order for membership renewal to the treasurer and then trying to register online or by mail for the annual meeting on the same day does not work. Moreover, trying to pay for membership renewal online in tandem with registering for the annual meeting online does not work well either.

### EXTRA ABSTRACT SUBMISSION

Besides sending abstracts of papers and posters to the Program Committee by January 4, 2010, anyone wishing to be considered for an award must send an abstract to the respective award committee chairperson in order to be considered. An abstract must be sent to the chairperson by January 4, 2010.

### INSTRUCTIONS FOR SUBMITTING ORAL PRESENTATIONS AND PREPARING POSTERS

Complete and final Powerpoint (2003 preferred) presentations must be submitted ONLINE (http://www.asb.appstate.edu/) to the audiovisual coordinator to be received by April 2, 2010. On-line submission will begin February 1. Presenters should bring a backup copy on a USB memory drive. Poster space is 46" x 46". Bring your own pins or Velcro.

For questions contact Dr. Greg Adkison, Department of Biology, Western Carolina University, email: gadkison@email.wcu.edu, 828-227-3655 or Dr. Beverly Collins, Department of Biology, Western Carolina University, email: collinsb@email.wcu.edu, 828-227-3663.63

### Nomination for ASB Officers and Executive Committee Positions

**DEADLINE: 16 OCTOBER 2009** 

To members of the Nominating Committee: I wish to suggest that you consider the following ASB member(s) in selecting nominees for officers and executive committee positions. ( <i>Please include the institutional address of each nominee</i> .)
PRESIDENT-ELECT
VICE-PRESIDENT
SECRETARY
EXECUTIVE COMMITTEE (two will be elected for three-year terms)
MAIL TO: Dr. Thomas R. Wentworth, Department of Plant Biology, North Carolina State University, Raleigh, NC 27695-7612; (919) 515-2168; Fax (919) 515-3436; tom_wentworth@ncsu.edu.  NAME & ADDRESS OF NOMINATOR

### IGHLANDS BIOLOGICAL STATION HIGHLANDS, NORTH CAROLINA



Since 1927, HBS has been a center for biodiversity studies of southern Appalachian biota. HBS offers programs and facilities for students, educators, and researchers in the natural sciences who come to study the rich biodiversity of the Highlands Plateau and environs.

### • SCHOLARSHIPS FOR RESEARCH •

Graduate students and post-graduate researchers are invited to apply for grants-in-aid for research based at HBS.

## SUMMER COURSES IN FIELD BIOLOGY •

include Southern Appalachian Amphibians, Aquatic Invertebrates, Rock Outcrop Communities, Conservation Biology, 2-week courses and 1-week workshops are offered for credit each summer (scholarships available). Offerings Forest Ecosystems, Vascular Plants, Bryophytes, Scientific Illustration, and Climate Change Ecology.

### • RESEARCH AND TEACHING FACILITIES •

Classrooms, labs and dorms are available for field trips and field research. HBS is located near the Great Smoky Mountains, Nantahala National Forest, Joyce Kilmer Memorial Forest and other important natural areas.

# INTERNSHIPS FOR UNDERGRADUATES

Undergraduate internships are available each summer in the Highlands Nature Center and Highlands Botanical Garden, located on the HBS campus. Stipends and housing are provided

# AN INTERINSTITUTIONAL CENTER OF THE UNIVERSITY OF NORTH CAROLINA

(828) 526-2602

### SUPPORT AWARDS FOR GRADUATE STUDENT MEMBERS OF ASB

### **DEADLINE FOR POSTMARK: 30 JANUARY 2010**

Limited funds are available to partially defray the expenses of graduate students attending the Annual Meeting. The awards are for lodging and meals only, including the ASB Banquet. Departments are urged to provide transportation for their graduate students. Recipients must be members of ASB. See ASB web site for membership application or renewal forms. The guidelines for application are as follows:

- (a) The recipient is a current member of ASB.
- (b) The recipient must be presenting a paper or poster at the Annual Meeting and must include a separate copy of the abstract of the paper or poster to be presented along with the application.
- (c) The recipient must be currently enrolled as a graduate student in the department where he/she conducted this research.
- (d) Student travel awards are granted on a competitive basis. Applicants must document expected expenses and list other sources of financial support for this meeting, including institutional aid, shared lodging and shared transportation.
- (e) In a paragraph, give a brief history of your education to date: indicate how many years you have been in graduate school and the expected date of completion of work for your degree, your major field of study and research, publications, including those in press and in preparation, degree sought, name of major professor and any other pertinent details.
- (f) Give your source(s) of support while in graduate school: e.g. NSF, NIH, USDA, Teaching Asst., Research Asst., etc.
- (g) Include a letter of recommendation for an ASB support award from your faculty research advisor. This letter should comment on the work being presented and indicate the financial need of the student presenter. It should also indicate whether any departmental or other funding is available to the student.
- (h) Send application with supporting letter to: Dr. Joey Shaw, Department of Biological and Environmental Sciences, University of Tennessee, Chattanooga, TN 37403; 423-443-9568. In addition, e-mail a copy of your completed application documents without the supporting letter to Joey-Shaw@UTC.edu.
- (i) Applicants will be notified of the decision of the Committee as soon as is practical. Recipients of the award will pick up their checks at the ASB table at the meeting.

### **GUIDELINES FOR POSTER PRESENTATIONS**

Poster sessions have been incorporated as a regular means of scientific presentation at the annual ASB meetings. This type of presentation provides a more informal environment that encourages a direct interchange of ideas and discussion between presenter and audience. Poster presentations are open to all ASB members. Adherence to the following guidelines helps ensure the effectiveness of the poster presentation and consideration for the award.

- (1) Display should fit on a 46" h x 46" w board suitable for thumbtacks, pushpins, or Velcro.
- (2) Poster must be displayed from 10 a.m. Thursday through 5 p.m. Friday. Authors will be required to be present at specified times during the Annual Meeting.
- (3) Poster should be carefully planned to maximize clarity and simplicity in conveying information.
- (4) Poster should have a heading, including a title, author, and author's institution(s). This heading should be placed at the top in letters no less than **3 cm** high.
- (5) The body of the poster, including text, figure legends, and table captions, should be in type no smaller than **18 pt (3-4 mm)** and *must* be legible from a distance of about 1-2 meters.
- (6) The body should be self-explanatory and should include figures, tables, graphs, maps, or photographs displayed in a well organized, coherent, and easy-to-follow sequence from top to bottom. Each illustration should contain a caption. *Do not overcrowd the display*. Significance will be one of the criteria looked for in judging the posters.
- (7) A limited degree of text may be included, but care should be taken not to overwhelm the audience.
- (8) A large, abbreviated version of the abstract should be presented at the top of the poster, but below the heading. A clear listing of specific conclusions should appear at the bottom or end of the presentation. An abstract must also be submitted to the award committee chair.

Further inquiries may be directed to the **Chair of the ASB Poster Award Committee**: Dr. Lathiena Manning, 11712 S. Laurel Drive, Apt. 2A, Laurel, MD 20708; cell 302-740-0531; Imanningbiology@hotmail.com.

### **RESEARCH AWARDS**

**SPECIAL NOTICE:** Please read carefully the description of requirements for the ASB award for which you apply. Note especially that recipients of ASB awards must be present at the annual ASB banquet to receive the award.

### **ASB SENIOR RESEARCH AWARD (\$1000)**

Given for an especially meritorious manuscript presented orally by the senior author at the annual meeting of ASB (or co-author under exceptional circumstances if the senior author cannot attend). The award applicant must be senior author on both the manuscript and oral presentation, and the presenter must be a member of ASB. In order to qualify for this award, sponsored by ASB Patron Member Marilyn Pendley, the senior author (or a representative) must have presented work orally at any previous annual meeting or have submitted an abstract by the 16 January abstract deadline for an oral presentation at the next annual meeting. The manuscript must either have been submitted for publication or be ready for submission and carry the format of the journal to which it will be (or has been) submitted. Author(s) may submit their papers electronically by emailing them to the committee chair (pdf preferred). Include a short (1 page maximum) biography of the award applicant. If sent by hardcopy, submit three copies of the manuscript and biographical sketch. Manuscripts received by 30 January 2010 will compete for the 2010 Senior Research Award. Manuscripts not received by this deadline (but submitted by the next year's deadline) will remain in competition for the 2010 Senior Research Award. However, such manuscripts cannot have been published prior to the last annual meeting. Judges will use a standard evaluation form that includes the following criteria: significance of ideas. soundness of hypotheses, originality (creativity), quality of methodology, validity of results, soundness of conclusions, clarity, completeness, organization, and contribution to the field. Review papers, if submitted, should contain new information, such as novel syntheses from existing data, or an original contribution that extends our knowledge of the field, rather than just a review of existing literature. At the discretion of the Senior Research Award Committee, the award may be withheld or it may be split in case of a tie. The recipient of the award must be present at the annual ASB banquet to receive the award.

**Committee Chair**: Dr. George R. Cline, Biology Department, Jacksonville State University, 700 Pelham Road, Jacksonville, AL 36265; 256 782-5798; fax 256 782-5587; gcline@jsu.edu.

### ASB STUDENT RESEARCH AWARD (\$1000)

Given for an especially meritorious manuscript presented orally by the author(s) at the annual meeting. To be eligible for the Student Research Award (sponsored by ASB **Patron Member Martin Microscope Company**), the recipient must be the senior author on the manuscript, and must be a graduate or undergraduate student at the time of presentation. To qualify for the award, the author(s) must submit an **abstract** to the current Student Research Award Committee Chair (posted on the website), due the same date as abstract

submission to the program committee for presentations or posters (specified in the official call for papers). Complete applications for the competition must be received by the Student Research Award Committee Chair by January 30<sup>th</sup> prior to the annual meeting. Complete applications include (1) Three copies of a journal-ready manuscript. Papers may be in press, or published after the previous ASB annual meeting, but not prior; (2) abstract in same format as submitted for the ASB call for papers, including author names, titles, and contact information; (3) biographical sketches of each author. These materials may also (in addition to hardcopy) be sent by email to the committee chair. Judges will evaluate the manuscripts based on significance of ideas, soundness of hypotheses, originality, methodology, validity of results, conclusions, clarity, completeness, organization, and contribution to the field. At the discretion of the Student Research Award Committee, the award may be withheld or it may be split in the case of a tie. Only members of the ASB are eligible and the recipient of the award must be present at the Annual ASB Awards Banquet to receive the award.

**Committee Chair:** Dr. Ricky Fiorillo, Department of Biology, University of Louisiana at Monroe, Monroe, LA 71209; 318 342-1797; fax 318 342-3312; fiorillo@ulm.edu.

### BROOKS/COLE CENGAGE LEARNING STUDENT RESEARCH AWARD IN AQUATIC BIOLOGY (\$200)

The purpose of this award, sponsored by ASB Patron Member Brooks/Cole Cengage Learning, is to encourage excellence in aquatic biology research by undergraduate and graduate students. It is intended that "aguatic biology" be broadly interpreted. For example, research projects on aquatic organisms, wetland biota, and water quality are eligible. To be eligible for the Student Research Award in Aquatic Biology, the recipient must be the senior author on the manuscript, and must be a graduate or undergraduate student at the time of presentation. The paper must be based on research designed and completed by the student, and must be presented orally by the student as senior author at the annual meeting. To qualify for the award, the author(s) must submit an abstract to the current Student Research Award Committee Chair (posted on the website), due the same date as abstract submission to the program committee for presentations or posters (specified in the official call for papers). Complete applications for the competition must be received by the Student Research Award Committee Chair by January 30th prior to the annual meeting. Complete applications include (1) Three copies of a journal-ready manuscript. Papers may be in press, or published after the previous ASB annual meeting, but not prior: (2) abstract in same format as submitted for the ASB call for papers. including author names, titles, and contact information; (3) biographical sketches of each author. These materials may also (in addition to hardcopy) be sent by email to the committee chair. Judges will evaluate the manuscripts based on significance of ideas, soundness of hypotheses, originality, methodology, validity of results, soundness of conclusions, clarity, completeness, organization, and contribution to the field. At the discretion of the Student Research Award Committee, the award may be withheld or it may be split in the case of a tie.

### Only members of the ASB are eligible and the recipient of the award must be present at the Annual ASB Awards Banquet to receive the award.

Committee Chair: Dr. Ricky Fiorillo, Department of Biology, University of Louisiana at Monroe, Monroe, LA 71209; 318 342-1797; fax 318 342-3312; fiorillo@ulm.edu.

### ASB RESEARCH AWARD IN MICROBIOLOGY (\$500)

Sponsored by ASB, the award is given for an especially meritorious oral presentation of research results by the author(s) at the annual meeting. The purpose of the award is to stimulate greater participation at the Annual Meeting in the broad area of microbiology, principally prokaryotic microbiology. The research may involve cell biology, physiology, molecular biology and/or genetics of these organisms, but must clearly be about the organisms and not the disciplines. The presentation must deal clearly with prokaryotic microbes and should represent substantially completed work. In order to qualify for this award, the senior author must request consideration for the award on the abstract submission form, submit one copy of the title and abstract to the ASB Program Chair by 16 January 2010, and submit a second copy by the same date to the Microbiology Award Committee Chair. Only members of ASB are eligible and the recipient of the award must be present at the Annual ASB Banquet to receive the award (go to http://asb.appstate.edu/member.htm for membership application or renewal form).

Committee Chair: Dr. Donald H. Roush, Department of Biology, University of North Alabama, P. O. Box 5181, Florence, AL 35632; 256 765-4435; fax 256 765-4430; dhroush@una.edu.

### **ASB STUDENT POSTER AWARD (\$300)**

Given for an especially meritorious poster presentation by the author(s) at the Annual Meeting. The purpose of the award, sponsored by ASB Patron Member Brooks/Cole Cengage Learning, is to stimulate greater student participation at the Annual Meeting. To qualify for this award, the senior author must be a graduate or undergraduate student at the time of presentation, must be a member of ASB, must submit an abstract by the 16 January 2010 deadline, and must be present at the Annual ASB Awards Banquet. Student poster presentations must also adhere to the "Guidelines for Poster Presentations." Only student authors who request consideration for the poster award on the abstract submission form will be judged for the award. In addition to adherence to the "Guidelines for Poster Presentations," student poster presentations will also be judged using the following specific criteria:

- (1) Overall aesthetics and attractiveness of presentation
- (2) Ease of reading from a distance (1-2 meters)
- (3) Clear and concise organization
- (4) Clearly stated hypothesis or study objectives
- (5) Soundness of methods for testing hypotheses or meeting study objectives
- (6) How well conclusions are supported by results

At the discretion of the ASB Poster Award Committee, the award may be withheld or it may be split in the case of a tie. Some posters may also be awarded "Honorable Mention" at the discretion of the ASB Poster Award Committee (Honorable Mention awardees receive no monetary award). Further inquiries may be directed to the chair of the ASB Poster Award Committee.

**Committee Chair:** Dr. Lathiena Manning, 11712 S. Laurel Drive, Apt. 2A, Laurel, MD 20708; cell 302 740-0531; Imanningbiology@hotmail.com.

### EUGENE P. ODUM AWARD (\$500)

Given by the Southeastern Chapter of the Ecological Society of America, for the best ecological paper presented orally by a student. The paper must deal with a clearly ecological topic and should represent essentially completed work. Undergraduate and graduate students are eligible, and the student must be the sole or senior author. Students may not compete for the Award in successive years with the same project, and may not compete simultaneously for the Odum Award and the Quarterman-Keever Award in the same year. Previous Odum Award winners are ineligible. Submit a copy of the paper title, abstract, and author information to the ASB Program Chair by the "Call for Papers" deadline of 16 January 2010, and send a second copy to the Odum Award Committee Chair by the same deadline.

**Committee Chair:** Dr. Joel Gramling, Department of Biology, 214 Duckett Hall, The Citadel, 171 Moultrie St., Charleston, SC 29409; 843-953-6459; fax 843-953-7264; joel.gramling@citadel.edu.

### ELSIE QUARTERMAN-CATHERINE KEEVER AWARD (\$300)

Given by the Southeastern Chapter of the Ecological Society of America for the best ecological poster presented by a student. This award was presented for the first time in 2005. Undergraduate and graduate students are eligible. The student must be the sole or senior author. The poster must deal with a clearly ecological topic and should represent substantially completed work. It should be presented in a regular contributed poster session. Students may not compete for this award in successive years with the same project. Students may not compete simultaneously for the Elsie Quarterman-Catherine Keever Award and the Odum Award in the same year. One copy of the title and abstract should be sent to the ASB Program Chair by the "Call for Papers" deadline of 16 January 2010 and a second copy must be sent via email by the same date to the Quarterman-Keever Committee Chair.

**Committee Chair**: Dr. James Luken, College of Natural and Applied Sciences, Coastal Carolina University, P.O. Box 261954, Conway, SC 29528-6054; 943-349-2235; Fax 843-349-2926; joluken@coastal.edu.

### THE NORTH CAROLINA BOTANICAL GARDEN AWARD (\$200)

Given by NCBG (through the Southeastern Section of the Botanical Society of America and the Southern Appalachian Botanical Society). This is awarded for a paper presented at the annual ASB meetings that best advances our understanding of the biology and conservation of the southeastern plants and thus contributes to the mission of the North Carolina Botanical Garden. Of special interest to the Garden are the rare plant species of the Southeast: why they are rare; how they interact with plants, animals, and their environment; and what can be done to ensure their survival. The paper may deal with a broad area including systematics, ecology and conservation. All individuals who are eligible to present at the ASB meetings are eligible for this award. They may be students, faculty or others.

**Committee Chair:** Dr. John Randall, Department of Biology, University of North Carolina, Greensboro, NC 27412; 919-962-0522; fax 919-962-3531; jrandall@email.unc.edu.

### SOCIETY OF WETLAND SCIENTISTS SOUTH ATLANTIC CHAPTER STUDENT TRAVEL AWARD

The South Atlantic Chapter of the Society of Wetland Scientists (SWS) will again offer its student travel award to support students presenting wetland research at the ASB annual meeting. We will award at least \$100 to a maximum of five students. The Chapter's Awards and Executive Committees will judge the applicants based on the scientific quality and importance of their research as described in the abstract. All students presenting research on a wetland topic are eligible; membership in SWS is not required. Please check the appropriate box on the ASB registration form and submit the abstract as instructed in the ASB call for papers. Further, applicants must also submit their abstract, by electronic mail, to **Dr. David E. Bailey at dbailey81@gmail.com, at the same time the abstract is submitted to ASB.** Award winners will be invited to the Chapter's luncheon meeting (no charge for awardees) held during the ASB annual meeting. Dr. Bailey's address: U.S. Army Corps of Engineers, 69 Darlington Avenue, Wilmington, NC 28403; 910 251-4469.

### BOTANICAL SOCIETY OF AMERICA SOUTHEASTERN SECTION STUDENT AWARDS

**Two awards**: A \$300 cash prize for the best paper and a \$300 cash prize for the best poster in plant science presented at the annual meeting of ASB. In addition, each winner will receive funds towards travel to the annual BSA meeting as well as one year's membership in BSA. These are awards for papers and posters in botany in its broadest sense including fungi and algae as well as plants.

Who is eligible: Undergraduate and graduate students are eligible. The student must be the sole or senior author of the paper or poster.

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**How to apply**: To be included in the competition, applicants should e-mail their abstract to the Botanical Society of America Southeastern Section Student Award committee chair by the abstract deadline of 16 January 2010. The winner will be announced at the ASB Banquet.

**Committee Chair:** Dr. Lytton John Musselman, Department of Biological Sciences, Old Dominion University, Norfolk, VA 23529-0266; (757) 683-3595; Fax (757) 683-5283; cell (757) 434-0982; lmusselm@odu.edu.

### **Earl Core Student Award**

The Core Student Award was established by the Society Council to provide financial assistance in support of student research projects in plant taxonomy, systematics and ecology.

### **Criteria and Procedures**

- 1. An applicant for a Core Student Award **and** his/her research advisor must be members of the Southern Appalachian Botanical Society (SABS).
- 2. Support in the form of a Core Student Award will be presented to an individual student for a given research project only once; applications for additional support for the same project will not be considered.
- 3. The research advisor will attest to the applicant's student status and validity of the research proposal.
- 4. The annual award period will run from May 1 of the award year through April 30 of the next year.
- 5. An individual award may not exceed \$300.
- 6. Award applications for consideration each year must be received by the committee chair no later than February 15 of the award year. Download the application cover sheet on SABS website (http://www.sabs.appstate.edu/Awards/CoreMain.htm) for submitting information. The chair will transmit copies of each application to other members of the committee and will subsequently report the decision of the committee to the Society president by April 1. Award recipients will be announced in April at the annual meeting of SABS/ASB in Asheville, North Carolina.
- 7. Awards will be designated on a competitive basis with the applications reviewed and awardee(s) selected by the Core Student Award Committee. Should a member of the committee be the research advisor of an applicant, he/she will be excused as a reviewer for that entire group of applications and replaced by the society president.
- 8. Recipients of a Core Student Award are expected to submit a summary for publication in *Chinquapin* (our newsletter). Though not required, recipients are encouraged to submit the results of their research to *Castanea* for possible publication. In any case, oral presentation(s) and/or publication(s) resulting from financial support will appropriately acknowledge SABS.

Submit completed applications to: **Dr. Kathy Mathews, Chair**, Department of Biology, 132 Natural Science Building, Western Carolina University, Cullowhee, NC 28723; 828 227-3659; kmathews@email.wcu.edu.

**2009-2010 Earl Core Student Award Committee:** Kathy Mathews, Chair, Western Carolina University (2007-2010); Douglas P. Jensen, Converse College (2008-2011); Rebecca A. Cook, Lambuth University (2009-2012).

For the award requirements of other ASB affiliates, visit their respective web site:

American Society of Ichthyologists and Herpetologists—http://www.asih.org/ Southeastern Microscopy Society—http://www.semicroscopy.org Southern Society of Parasitologists—http://asp.unl.edu

### SPECIAL AWARD

### THE ROBERT H. MARTIN PROFESSIONAL EXCELLENCE AWARD

Sponsored by Martin Microscope Company, this ASB award is established to honor the memory of Robert H. Martin, Sr., founder of Martin Microscope Company. ASB members are invited to nominate outstanding ASB scientists, educators, and professionals to receive the Robert H. Martin Professional Excellence Award, established in 2008 and sponsored by Martin Microscope Company. In keeping with the example of the award namesake, nominees must be ASB members who have devoted a major portion of their career to energetic, creative commitment and skillful, effective service to biology education, biology research, and/or the biology profession. This award is only presented when the award committee identifies an exceptional, qualified nominee. Recipients are honored at the Awards Banquet during the ASB Annual Meeting and will receive a plaque and a cash award. The amount of the cash award is to be determined by the Robert H. Martin Award Fund Committee. Nominations must include a detailed written description of the candidate's qualifications. Nominations may be submitted at any time.

Please send nominations to: **Tim Atkinson**, ASB Treasurer, 2700 York Rd., Burlington, NC 27215, tim.atkinson@carolina.com.

### Honor Thy Teacher! ASB MERITORIOUS TEACHING AWARD DEADLINE JANUARY 30, 2010

Each year the Association of Southeastern Biologists recognizes one of its members for especially meritorious teaching. Carolina Biological Supply Company, Burlington, North Carolina, generously sponsors this \$1500 award, which will be presented together with a plaque and appropriate citation at the Annual Banquet in Asheville, North Carolina, in April, 2010. The Meritorious Teaching Award Committee each year selects the award winner

- from among those who have been members of the association for at least 10 years
- and who have taught biology for at least ten years in any college or university represented in the association.

There is no restriction on the size of the institution, nor must the institution have a graduate program. The award simply recognizes highly effective teaching

> as highlighted in nominations from former students or colleagues.

There are many deserving teachers in ASB; however, these individuals cannot nominate themselves, so former students or colleagues must take an active role in assembling the materials that the committee will then evaluate.

We urge you to take the lead, pass the word – serve as the coordinator and nominate a deserving teacher! Solicit supporting letters from the nominee's present and former students. Contact his or her colleagues for additional endorsements. Document any form of recognition by the nominee's home institution of excellence in teaching, as well as special assignments and mentoring roles facilitating good teaching. Of special note would be the number and quality of students for whom the nominee provided primary inspiration to continue their study of biology, especially for students who subsequently earned advanced degrees. In short, document the educational impact this individual has made by virtue of his or her role as a biology professor.

Nominators should prepare a portfolio containing at least a letter of nomination, the nominee's current *curriculum vitae*, and supporting letters, together with the Nomination Form for the Meritorious Teaching Award and other relevant documentation. Submit all materials in triplicate by the January 23 deadline to: Dr. Safaa Al-Hamdani, Biology Department, Jacksonville State University, 700 Pelham Road, Jacksonville, AL 36265; 256 782-5801; fax 256 782-5587; sah@jsu.edu. If you have any questions, please call me or send an email. Files for previously nominated candidates who did not receive the award will remain active for two additional years, and these files may be updated. Such updated files are very carefully considered by the committee. The committee would welcome the task of deciding among several candidates.

Thanks for taking the initiative to nominate your favorite teacher!

Dr. Safaa Al-Hamdani, Chair ASB Meritorious Teaching Award Committee

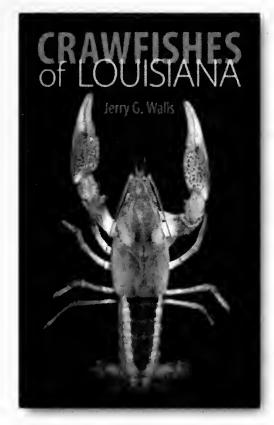
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NOMINATION-ASB MERITORIOUS TEACHING AWARD. 2010

### **ASB Outstanding Biology Teacher AWARD (\$750)**

OB

ASB maintains an enrichment fund to sponsor long- and short-range objectives to advance biological education through teaching and research. The Enrichment Fund Board is chaired by Michael Dennis. As has been the custom for the past several meetings, ASB recognizes individuals for their achievements and dedication to biology education at the secondary school level. The awardee is invited to attend the annual meeting and be honored. The use of money from this fund shows appreciation for excellence in teaching at the secondary level, and to reach out to our colleagues in the teaching profession. Contributions to the fund can be made at the annual meeting or can be sent to the Treasurer of ASB whose address can be found in the inside front cover of this issue.



Includes detailed illustrations of taxonomic features, color photographs of living specimens, and maps indicating distribution throughout the state

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### **ALL TAXA BIODIVERSITY INVENTORY (ATBI)**

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ATBI is an organization devoted to surveying all life in the Great Smoky Mountains National Park.

More information about the ATBI and Discovery Life in America (DLIA) may be obtained from the Executive Director, Todd Witcher, by e-mail todd@dlia.org. The website is http://www.discoverlifeinamerica.org or at http://www.dlia.org. The mailing address is Discover Life in America, 1314 Cherokee Orchard Road, Gatlinburg, TN 37738-3627. The telephone number is (865) 430-4752.cs

### SOUTHERN APPALACHIAN FOREST COALITION (SAFC)

### **ASHEVILLE, NORTH CAROLINA**

As stated in their newsletter *Across Our Mountains*, SAFC is an organization dedicated to "working together to protect and restore southern Appalachian forests."

More information about SAFC may be obtained from their web site at http://www.safc.org, and by e-mail at safc@safc.org. The mailing address is Southern Appalachian Forest Coalition, 46 Haywood Street, Suite 323, Asheville, North Carolina 28801-2838. The telephone number is (828) 252-9223.

### A LETTER FROM THE TREASURER

Dear ASB Member:

As you know, ASB strives to serve the educational and scientific community in many ways. These endeavors also serve the world community.

ASB encourages the advancement of biology by

- The promotion of research in biology
- The increase and diffusion of knowledge of biology
- The application of biology to the solution of biological problems
- The preservation of biological resources
- Its meetings, reports, discussions, and publications to promote scientific interests and inquiry

Website: http://www.asb.appstate.edu

### **PURPOSE**

The Association of Southeastern Biologists was established in 1937 by biologists concerned with the quality of biological research in the southeastern United States. Today, ASB is the largest regional biology association in the country, and is committed to the advancement of biology as a science by the promotion of science education, research, and the application of scientific knowledge to human problems.

### WHO WE ARE

ASB members include faculty, students, researchers, conservation workers, military and government personnel, and business people with a common interest in biological issues in the southeastern United States. Interests are diverse but range from genetics and molecular biology, to physiology and population ecology, to community and ecosystem ecology.

### **PATRONS**

Associated Microscope Inc, Elon and Haw River, NC
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### **AFFILIATE SOCIETIES**

American Society of Ichthyologists and Herpetologists, Southeastern Division Beta Beta, Southeastern Districts I and II Botanical Society of America, Southeastern Division Ecological Society of America, Southeastern Chapter Society of Wetland Scientists, South Atlantic Chapter Southeastern Microscopy Society Southeastern Society of Parasitologists Southern Appalachian Botanical Society Society of Herbarium Curators

2010 Meeting 509

### AWARDS PRESENTED BY THE ASSOCIATION

The Association and its affiliates present a number of awards at the annual meeting. These include several for outstanding research, plus service awards.

### **ASB Awards**

- **Meritorious Teaching Award** presented in recognition of outstanding teaching and mentoring of students. This is the association's most prestigious award. Sponsored by ASB Patron Member Carolina Biological Supply Company, Burlington, NC.
- **Student Research Award** presented to a student member for outstanding research. A written manuscript is required as well as an oral presentation at the annual meeting. Sponsored by ASB Patron Member Martin Microscopy Company, Easley, SC.
- Brooks/Cole Cengage Learning Student Research Award in Aquatic Biology presented to that student whose research in aquatic biology is deemed outstanding. Sponsored by ASB Patron Member Brooks/Cole Cengage Learning, Belmont, CA.
- **Senior Research Award** presented to a senior member for outstanding research. A written manuscript is required as well as an oral presentation at the annual meeting. Sponsored by ASB Patron Member Marilyn S. Pendley, Hudson, NC.
- **Student Poster Award** presented to a student member who has the best overall poster at the annual meeting. Sponsored by ASB Patron Member Brooks/Cole Cengage Learning, Belmont, CA.
- **Travel Support Grants** given to assist graduate students with expenses at the annual meeting. Sponsored by ASB.
- **Research Award in Microbiology** presented to a member for outstanding research in Microbiology. Sponsored by ASB.

### **Affiliate Awards**

- **The North Carolina Botanical Garden Award** sponsored by the NCBG. Presented to a member for outstanding research which best advances our understanding of the biology and conservation of the southeastern plants.
- **Eugene P. Odum Award** sponsored by the Southeastern Chapter of the Ecological Society of America. Presented to a student member for the most outstanding paper presentation in the field of ecological research.
- Elsie Quarterman-Catherine Keever Award sponsored by the Southeastern Chapter of the Ecological Society of America. Presented to a student member for the most outstanding poster presentation in the field of ecological research.
- Ichthyology and Herpetology Awards sponsored by the Southeastern Division of the American Society of Ichthyologists and Herpetologists. Presented to a student member for outstanding research in each of the two categories.
- **Elizabeth Ann Bartholomew Award** sponsored by the Southern Appalachian Botanical Society. Presented to individuals who have distinguished themselves in professional and public service that advances our knowledge and appreciation of the world of plants.

- **Earl Core Student Award** Sponsored by the Southern Appalachian Botanical Society. Presented annually to assist students with their research projects.
- **Richard and Minnie Windler Award** sponsored by the Southern Appalachian Botanical Society. Presented annually to the author or authors of the best systematic botany paper published in *Castanea* during the previous year.
- **Student Award in Plant Science** sponsored by the Southeastern Section of the Botanical Society of America. Presented to a student for the most outstanding paper presentation and to a student for the most outstanding poster in plant science.
- **Byrd Award** sponsored by the Southeastern Society of Parasitologists. Presented to a member for outstanding research in the field of parasitology.
- Ruska Award sponsored by the Southeastern Microscopy Society. Presented annually to recognize and reward student excellence in research in which microscopy is used as a research tool.

### **ANNUAL MEETING**

Annual meetings are hosted by member institutions throughout the southeast. Meetings are in April, and include a distinguished plenary speaker, special symposia, field trips, oral and poster presentations of research, workshops, social events, exhibits, election of officers, and award presentations.

### **MEMBERSHIP**

The Association of Southeastern Biologists currently has about 1400 members, spread among 220 academic and 60 non-academic institutions.

### **ACTIVITIES**

The Association publishes a quarterly bulletin, *Southeastern Biology*, which contains the program of the annual meeting and abstracts of papers presented, book reviews, science news and information about scientists in the southeast, Association affairs, and special features of regional or timely interest.  $\Theta$ 

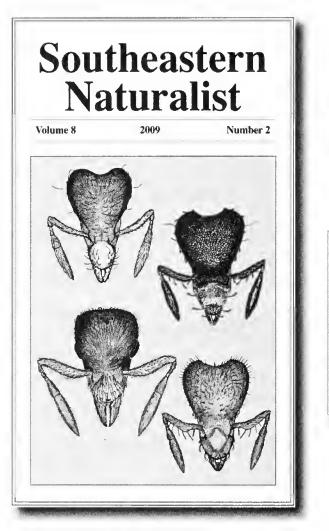
### SEVEN REASONS TO BE AN ACTIVE ASB MEMBER

- 1. Subscription to Southeastern Biology, the Bulletin of the Association.
- 2. Privilege of presenting papers at the annual meeting.
- 3. Publication of your abstracts and articles in Southeastern Biology.
- 4. Participation in recognition, honors, and awards competition.
- 5. Representation of your interests in regional, national, and worldwide governmental, educational, and industrial programs concerning biology
- 6. A vehicle to showcase and support students' work in the biological sciences.
- 7. Participation is a commitment to your profession and your active support becomes part of over 60 years of significant biological legacy in the southeastern United States.

2010 Meeting 511

A contribution to the ASB Enrichment Fund will help to insure the continuation of these efforts. Please consider what you may do.
YES, I want to contribute to the ASB Enrichment Fund!
I enclose my contribution of \$ Please use this to further the interests of ASB and its Members.
I would like to see the ASB Enrichment Fund used in the following areas (Check those you wish to support):
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Graduate Student Travel Grants
Speakers & Programs for the Annual Meeting
Outstanding Teacher Awards
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Please make any checks payable to ASB. Please mail your contributions and ideas to:
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### **OBITUARIES**

### WILLIAM RAY BOWEN 1936-2009

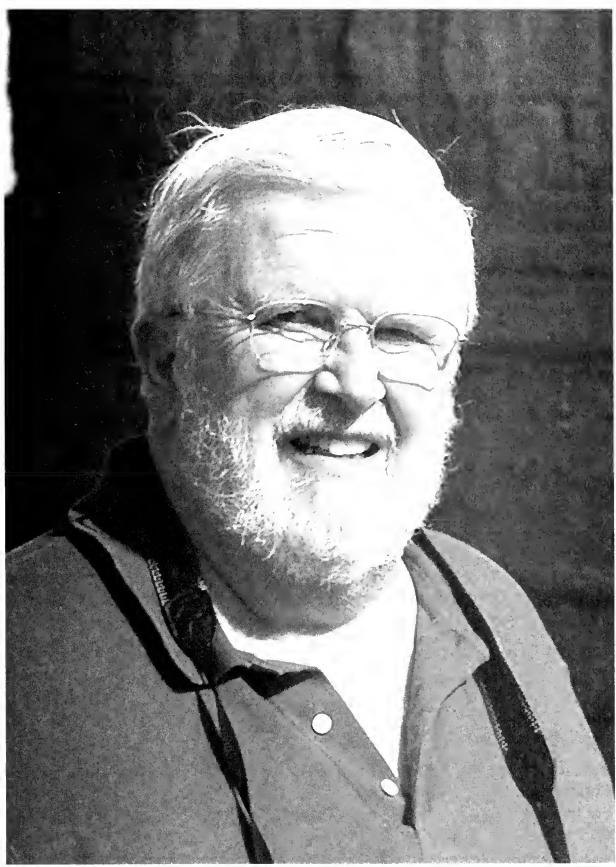
William Ray (Bill) Bowen, 72, of Maumelle, passed away at his home Monday, January 19, 2009 following a long battle with cancer. Survivors include his beloved wife of 48 years, Janet Bowen; two sons, Jeffrey Bowen and his wife, Lori, of North Little Rock, and Scott Bowen and his wife, Kelly, of Little Rock; grandsons Hunter Bowen and Austin Bowen; granddaughter, Emma Bowen; and two brothers, Robert Bowen and John Bowen of Springfield, Missouri. A sister, Barbara, preceded him in death.

Mr. Bowen was born October 15, 1936, in Iowa City, Iowa, to the late Esther and William Bowen. He graduated from Grinnell High School in 1956, then earned a BA in biology from Grinnell College (Iowa) in 1960 and an MS and PhD in botany from the University of Iowa in 1964. He taught botany/biology at Western Illinois University and Ripon College (Wisconsin) before joining the faculty of the University of Arkansas at Little Rock (UALR) in 1975. In 1990, he joined Jacksonville State University in Alabama as Head of the Biology Department. He was instrumental in the modernization of the department, and in creating the Little River Canyon Field School and the Little River Canyon Center, a facility shared with the National Park Service. Mr. Bowen retired from JSU as Professor Emeritus in 2001 and, in 2002, he and his wife returned to Arkansas.

During his lifetime, Bill was an avid tennis player and amateur photographer. After relocating to Maumelle, he participated in the Pulaski County Master Gardener program and he and Jan developed a backyard wildlife garden. Together they enjoyed travel to the western states, Canada, Europe, Australia, New Zealand, China, Tibet, and Central and South America.

Mr. Bowen's ashes will be scattered at the Little River Canyon Center in the Little River Canyon National Preserve, Alabama. In lieu of flowers, the family requests that memorials be made to the JSU Foundation, William R. Bowen Student Research Fund, c/o Biology Department, Jacksonville State University, 700 Pelham Rd, N., Jacksonville, Alabama 36265.

Arkansas Democrat-Gazette, 121 East Capital Avenue, Little Rock, AR 72201



Dr. William Ray Bowen

### GEORGE ANDREW CHRISTENBERRY 1916-2009

Dr. George Andrew Christenberry, 93, President Emeritus of Augusta State University, was entered into rest in Augusta, Georgia, on Tuesday, April 21, 2009. Dr. Christenberry was a native of Macon, Georgia, and grew up in Greenville, South Carolina. He received the B.S. degree (magna cum laude) in biology from Furman University, and the M.A. degree in 1938 and the Ph.D. degree in 1940 in biology and physics from the University of North Carolina. Dr. Christenberry served as professor of biology and chairman of the department at Meredith College, Raleigh, North Carolina, 1940-1943. He then joined the faculty of Furman to teach physics to the Cadet Training program of the Army Air Corps. A year later he entered the Navy as a radar officer and served in the Pacific theater. Dr. Christenberry returned to his teaching position at Furman in 1946, subsequently becoming professor of biology and dean of the Men's College. He was named president of Shorter College, Rome, Georgia, in 1953, returning to Furman in 1958, where he became administrative director and later vice president of development. During his presidency at Shorter, he also served as president of the Georgia Education Association's Department of Higher Education and the Georgia Association of Colleges. Dr. Christenberry became associated with Georgia College, Milledgeville, Georgia, as professor and chairman of the biology department in 1964. In 1965, he was named dean of the college and served in that capacity until coming to Augusta.

From 1974-1977 he served on the Board of Directors of the American Association of State Colleges and Universities. With other college presidents, Dr. Christenberry composed a team that visited the Peoples Republic of China upon invitation of the Ministry of Education. Similarly he and Mrs. Christenberry were invited to visit Taiwan at the request of the Republic of China Ministry of Education.

In the summer of 1979, he was named acting vice chancellor for the University System of Georgia. Upon the appointment of a chancellor, Dr. Christenberry, at his request, returned to the presidency of Augusta College in July of 1980.

Dr. Christenberry was a member of Phi Kappa Phi and Sigma Xi and had been active in the Georgia Academy of Science, the Association of Southeastern Biologists, and the American Institute of Biological Sciences. He served as president of the Rotary Club in both Milledgeville and Augusta and had been named a Paul Harris Fellow.

In his church, First Baptist Church of Augusta, Dr. Christenberry served as deacon, moderator, trustee, and Sunday School teacher. He was elected to the executive committee of the Baptist World Alliance and attended meetings in England, Austria, Liberia, as well as the United States.

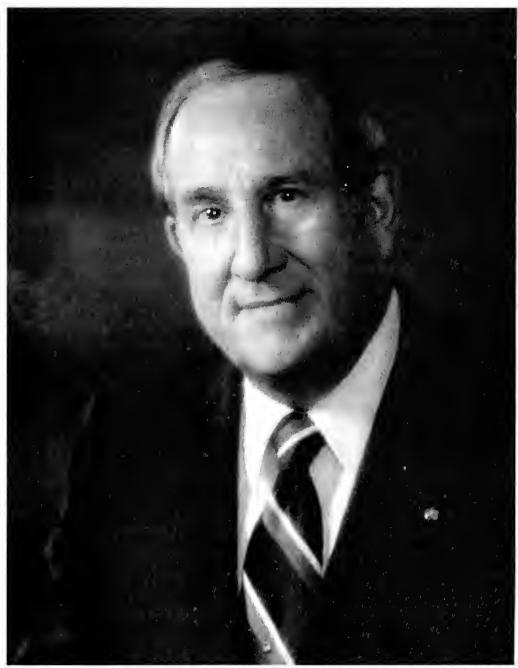
Dr. Christenberry's civic service included United Way, Red Cross, the Chamber of Commerce, the Human Relations Commission, the Greater Augusta Arts Council, and the Augusta Richmond County Museum. Since retirement he

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became an active member of the Augusta Genealogical Society. He was listed in Who's Who in America and in American Men and Women in Science.

Family members in addition to his wife Elizabeth Reid Christenberry include sons: George A. Christenberry, Jr., of Newnan, Georgia, and John Reid Christenberry of Hoschton, Georgia; daughter: Becky Christenberry Williams of Augusta; Eight grandchildren and seven great-grandchildren.

John Reid Christenberry, Assistant Vice President and Chief Information Officer, Georgia Perimeter College, Tucker, GA 30084, and Thomas Poteet & Son Funeral Directors, Augusta, GA 30907.



Dr. George Andrew Christenberry

### JAMES NORMAN DENT 1916-2009

James Norman Dent died January 31, 2009 in Charlottesville, Virginia. He was born in Martin, Tennessee, on May 10, 1916, to James Rolandus and Alta Norman Dent. He grew up in Tennessee and entered the University of Tennessee, from which he received a Bachelor of Arts degree in 1938. He was awarded the degree of Doctor of Philosophy by The Johns Hopkins University in 1941, specializing in endocrinology and development. During the summer of 1941 he was a member of a Johns Hopkins zoological expedition into the Blue Mountains of Jamaica. In the fall of 1941 he returned to Johns Hopkins to continue his research. In May of 1942 Professor Dent was taken into the Army Air Corps. In September he was commissioned as an Aviation Physiologist and served in that capacity until he was released from active duty in September 1945. He remained in the Air Corps Reserve and Air Force Reserve until he retired as Lieutenant Colonel in 1986.

Following his military service, Professor Dent taught briefly as an assistant professor at Marquette University in Milwaukee, Wisconsin, and at the University of Pittsburgh until September 1949 when he joined the Department of Biology at the University of Virginia, rising from associate professor to professor and professor emeritus upon his retirement in 1986. During his career at the University of Virginia he was on leave as visiting professor and/or research fellow several times. He visited Saint Andrews University, Saint Andrews, Scotland (1959-60); Harvard University (1968-69); Benaras Hindu University, Varanasi, India, and University of Calcutta, Calcutta, India (1975); University of California, Berkeley, California (1976). He was a Research Participant and Consultant at Oak Ridge National Laboratory, Oak Ridge, Tennessee, during the academic year of 1962-63 and the summers of 1964-69. From February through April of 1963 he served as special consultant to the Philippine Atomic Energy Commission in Manila, Republic of the Philippines.

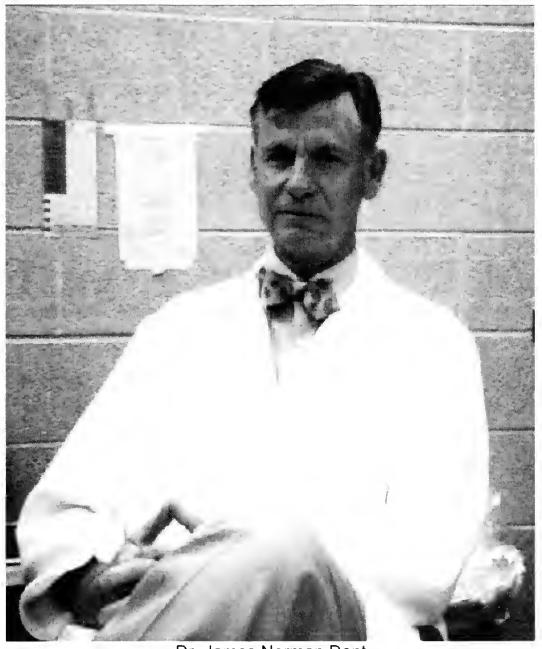
Professor Dent's research was concerned primarily with various aspects of developmental physiology and comparative endocrinology. Most of his studies were carried out upon amphibians. The results obtained by Professor Dent and by his students with him and by him in collaboration with other investigators were presented in over a hundred publications in various scientific journals and in chapters of three reference textbooks.

He was a member of the editorial board of the journal General and Comparative Endocrinology from 1978 to 1986. For most of his career, he was a member of the Association of Southeastern Biologists and served as Vice President (1969-70), member of the Executive Committee (1970-73), and President of the association (1974-75). Travel, especially foreign travel, was something Professor Dent enjoyed. He also participated in numerous backpacking and climbing trips, usually in the high Sierra. He took much pleasure in working with his shrubs and roses and occasionally in painting and sculpture. His greatest joy, however, was found on the ski slopes of Colorado.

Professor Dent is survived by his two daughters, Ms. Julie Dent Carlyle of San Francisco, California, and Ms. Martha Elizabeth Dent of Richmond, Virginia.

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Richmond Times-Dispatch, 300 East Franklin Street, Richmond, VA 23219.



Dr. James Norman Dent

### PERRY C. HOLT 1912-1999

Dr. Perry C. Holt died in Blacksburg in a local hospital on October 14, 1999. He was born June 26, 1912 in Livingston, Tenn., and married Willa Virgie Ford on August 2, 1942. They were married for 53 years before her death in 1994. Dr. Holt was a graduate of Tennessee Polytechnic Institute and earned M.A. and Ph.D. degrees from the University of Virginia. Dr. Holt was Professor Emeritus of Zoology at Virginia Polytechnic Institute and State University. He retired in 1978. Prior to his tenure at V.P.I. & S.U., he was on the faculty at East Tennessee State College in Johnson City, Tenn. Dr. Holt was a Ford Foundation Faculty Fellow at the University of Chicago, a Senior Research Associate at the Department of Invertebrate Zoology, Smithsonian Institution, a Fellow of the American Association for the Advancement of Science, a Fellow of the Virginia Academy of Science and was a recipient of the J. Shelton Horseley Research Award from the Virginia Academy of Science. He was a member of the Tennessee Academy of Science, the Virginia Academy of Science, Sigma Xi, the Association of Southeastern Biologists, the Society of Systematic Zoology, the Association of Systematic Collections, and the American Institute of Biological Sciences.

In 1975, he served as president of the Association of Southeastern Biologists, and as he departed that office in 1976, he presented the association a gavel that he carved using only a penknife. The head is yellowwood (Cladastris lutea) of the bean family and the handle from sassafras (Sassafras albidum) of the laurel family. Holt selected these woods because 1) they are distinctly eastern or southeastern trees and 2) they are "rare relicit species", the only species of their respective genera in North America. He wrote about the gavel and its significance for ASB in 1977, "This gavel is intended to be used gently, thus its small size.... The hope is that the woods of this gavel, characteristic and almost unique to, and well known in the region of the Association, beautiful in themselves, without the skill of the artificer, with their own provenance, may always remind us of the close relationship of so many of our members with wood and stream and simply rustic background and the good people who call such places home." Kenneth Schull, Appalachian State University, Boone, NC, wrote "The Story of the ASB Gavel," and included the original article written by Perry Holt. These are published in Southeastern Biology, 51(3): 244-245 (2004).

Dr. Holt is survived by one daughter, Dr. Susan E. H. West, Madison, Wis.; two grandchildren, Emily A. West, Chapel Hill, N. C. and James L. W. West, IV, Madison, Wis.; a son-in-law, Dr. Charles L. Viles; two great-grandchildren, Bradley Treman Viles and Clare Richardson West, both of Chapel Hill, N.C.; a brother, William T. Holt, Lebanon, Tenn., and a sister, Helen H. Waddell, Cleveland, Ohio.

Compiled from the obituaries section of the October 16, 1999 issue of the Roanoke Times, 201 W. Campbell Avenue, Roanoke, VA 24010-2491, and modified with additions by John M. Herr, Jr., Department of Biological Sciences, University of South Carolina, Columbia, SC 29208.



### JERRY C. RITCHIE 1937-2009

Dr. Jerry C. Ritchie was born on December 13, 1937 in Richfield, North Carolina and grew up on the family farm.

He passed away on June 13, 2009. Dr. Ritchie was a Soil Scientist with the USDA-Agricultural Research Service (ARS), Hydrology and Remote Sensing Laboratory, Animal & Natural Resources Institute, Beltsville, MD, since 1983. He received a B.A. from Pfeiffer University in 1960, a M.S. in Botany/Soils from the University of Tennessee in 1962 and a Ph.D. in Botany/Ecology from the University of Georgia in 1967. He first joined ARS in 1967 as a Postdoctoral Fellow with the USDA-ARS Southeast Watershed Research Center, Tifton GA. Shortly after, he became a Botanist/Soil Scientist at the USDA-ARS Sedimentation Lab, Oxford, MS (1968-1977). In 1978, he moved to Beltsville, MD to serve on the ARS National Program Staff and later joined the Hydrology Lab in 1983 as a Soil Scientist.

Dr. Ritchie had an illustrious career with ARS that spanned 42 years. He is recognized internationally for his contributions over a broad range of scientific disciplines. His research has contributed significantly to a better understanding of radionuclide movement in ecosystems, sediment deposition process, rates, and patterns, erosion processes, rates and patterns, remote sensing of spatial and temporal water quality patterns, spatial and temporal landscape roughness measurements and applications, the use of native vegetation for improving marginal soils and controlling soil loss, and the redistribution and potential sequestration of organic carbon in the soils of agricultural ecosystems.

One of Dr. Ritchie's most significant contributions, that had enormous impact on water quality assessments, involved the use of naturally occurring radioactive fallout as a tracer to measure sediment deposition rates in lakes, reservoirs and floodplains, and to also measure soil erosion patterns at the farm scale. This technique is used extensively by reservoir managers (i.e., power companies, Corps of Engineers, U.S. Geological Survey, Natural Resources Conservation determine recent sediment deposition rates geochronological tool to provide the time markers for determining time distribution patterns of other substances (i.e., pesticides, heavy metals, and carbon) in depositional environments. The use of naturally occurring radioactive fallout for measuring erosion and sediment deposition is currently promoted and supported by the International Atomic Energy Agency and the Food and Agricultural Organization of the United Nations for worldwide use as the preferred method for studying soil quality, erosion, and redeposition in sustainable agriculture systems.

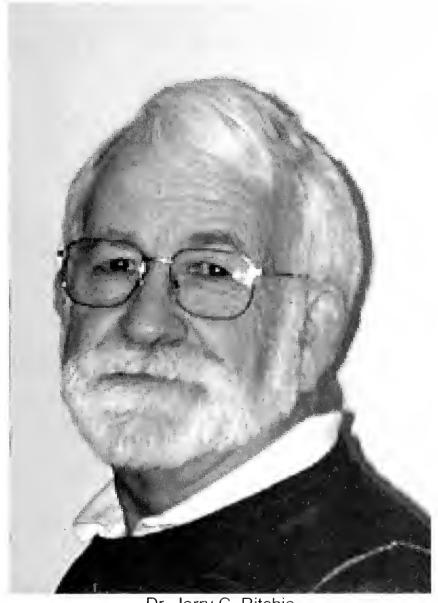
Dr. Ritchie authored or coauthored over 275 scientific publications. He was one of the founding members of the World Association for Sediment Research. In 2000, he was elected Fellow of the American Society of Agronomy and Fellow of the Soil Science Society of America. In 2004, he received USDA-ARS Beltsville Area Senior Scientist of the Year and in 2006 he received the USDA-ARS Beltsville Area Equal Employment Opportunity/Civil Rights Award. In 2008, Dr.

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Ritchie was presented with the American Society of Agronomy–Environmental Quality Research Award.

Dr. Jerry Ritchie is survived by his wife Carole Ritchie, son Jay Ritchie, daughter Karen Shihadeh, and granddaughter Malika Shihadeh.

Joseph T. Spence, Director, Beltsville Area, USDA-ARS Hydrology and Remote Sensing Laboratory, 10300 Baltimore Avenue, Beltsville, MD 20705-2350.



Dr. Jerry C. Ritchie

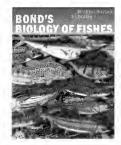


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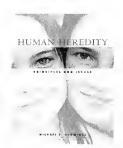
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